

SPACINSKY, S.

GORNER, F.; SPACINSKY, S.

Effect of lowered surface tension of calcium hypochlorite solution on its microbicide action. J. Hyg. Epidem., Praha 1 no.2:179-189 1957.

1. Regional Institute of Hygiene, Bratislava.

(ANTISEPTICS, eff.

calcium hypochlorite, eff. of lowered surface tension on microbicide action)

(MICROORGANISMS, eff. of drugs on

calcium hypochlorite, eff. of lowered surface tension on microbicide action)

SPAROVA, A.; HUBESKA, I.

Semiquantitative spectrographic analysis of minor elements in underlying clays containing titanium. II. A preliminary report. p.211.
(PRAGUE, Vol. 32, no. 3, 1957, Praha, Czechoslovakia.)

SC: Monthly List of East European Accessions (EEAL) IC, Vol. 6, no. 12, December 1957. Incl.

RUBESKA, Ivan; SPACKOVA, Alena; ZEMLICKA, Jan

Use of semiquantitative spectrochemical analysis for geochemical examination of clay sediments. Sbor chem tech no.3, part 2:285-306 '59.

1. Ustredni ustav geologicky, Praha a Katedra mineralogie, Vysoka skola chemicko-technologicka, Praha.

SPACKOVA, A.

1. "Estimating the Volume of the Individual Minerals in Barroisium Ore," Otto GEDIGAL, pp 121-129.
2. "Remarks on the Field of Atomic Summa in the Tain-Ram-dite Layers of the Norwegian-Allesteren Jockyte," Helmut KILBERT, pp 130-131.
3. "Mineralogy of Calcium in a No. 24 Deposit in North Viet Nam," Zdenek JOKLY of the Czech Research Institute (Jizov pro Vyzkum 1962), Prague, pp 132-138.
4. "New Finds of Phacelium Denticulatus (Norsk., 1890) in the Barroisium near Lodenice," Jiri NITZ, pp 139-144.
5. "Remarks on the Aluminous Formation of the Northern Portion of the Vltava-Valley," Pavel KOCHEK, pp 145-157.
6. "Local Spectroscopic Microanalysis of Mineralogical Data," Zdenek JOKLY and Zdenek SPACKOVA of the Central Geological Institute (Ustredni usti vyzkumny), Prague, pp 158-164.
7. "Movements on the Border Between the Middle and Outer Devonian in the Bohemian Massif," Zdenek JOKLY and Zdenek SPACKOVA, pp 165-175.
8. "Geological Conditions of the Barroisium," Zdenek JOKLY and Zdenek SPACKOVA, pp 176-183.
9. "Geology and Mineralogy," Karel JOKLY, pp 184-198.
10. "Barroisium in the Recent Sea Sediments," Zdenek JOKLY, pp 199-202.
11. "Adjustment of Comparative Spectra Tables for Another Type of Spectrograph Using the Example of Kalkula 6 Atlas for the Q-24 Spectrograph," Rudolf KOCY, pp 203-204.
12. "Note on the Yellowish Ocher from Kupa in Bohemia," Zdenek JOKLY of the Central Geological Institute, Prague, pp 205-206.

SPACKOVA, Alena

Spectrographic determination of silver in sulphide ores. Chem anal 7
no.2:423-428 '62

1. Ustredni ustav geologicky, Praha, Czechoslovakia.

SPACKOVA, Alena, dr. (Praha I, Hradebni 9, Czechoslovakia)

Spectrographic determination of gallium (and barium,
nickel, cobalt, and bismuth, respectively) in rocks.
Acta chimica Hung 30 no.3:341-349 '62.

1. Zentralgeologisches Institut, Praha.

HUNGARY

KREJCI, E., SPACKOVA, A.; Balneological Institute of Karls University, Prague and Central Geological Institute, Prague, CSSR [original language version not given].

"Determination of Gold in Various Solvents by Spectrography."

Budapest, Acta Chimica Academiae Scientiarum Hungaricae, Vol 38, No 2, 1963, pages 103-113.

Abstract: [German article, authors' English summary] Two methods have been developed for the spectrographic determination of minute amounts of gold in various liquid, mainly serum and urine samples. The first method is based on the analysis of the ash obtained by combustion of the samples. The second method measures the amount of gold in the biological liquids dropped on the graphite electrodes, by direct spectrography. This latter procedure is especially suitable for routine serial analyses. 4 Eastern European references.

SPACKOVA, A.

"Spectral analysis of minerals and rocks" by H. Moenke. Reviewed by
A. Spackova. Chem listy 57 no.10:1088-1089 0 '63.

SPACKOVA, Alena, RNDr., kandidátka chemických ved; RYBAKOVA, Bohumila

Spectral analysis of mineral waters. Geol Průzkum 5 no.11:
341-343 N '63.

1. Ústřední ústav geologický, Praha.

SPACKOVA, Alena, RNDr., kandidátka chemických ved; PLOSOVA, Marie

Spectral determination of low silver content in minerals. Geol
průzkum 6 no.2:55-56 F'64

1. Ústřední ústav geologický, Praha.

SPASKOVA, Alena. dr., 630, PRAHA, Marie

Spectral determination of beryllium in silicates. J. Chem. Zvesti.
19 no. 4:475-480 '65.

1. Central Institute of Geology, Prague 1, Halasova nam
19. Submitted October 6, 1964.

SPACKOVA, J.

SCIENCE

Periodicals: BIOLOGIA Vol. 10, no. 7 6, 1955

SPACKOVA, J.: SIMKOVIC, D.: KLIMEK, M. Use of extract from a human placenta in cultivation in vitro. I Cultivation of chicken fibroblasts in a medium containing an extract from placenta. p. 754.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 5
May 1959, Unclass.

BENESOVA, O.; SPACKOVA, M.; ZABRODSKA, A.; LEGEROVA, A.

Comparative studies on methods of determination of the effectiveness of heparin with special reference to the selection of the suitable method for the 2nd edition of the Czechoslovak Pharmacopeia. Cesk. farm. 3 no.6:219-221 Je '54.

1. Z Kontrolního ústavu farmaceutického v Praze.
(HEPARIN,

*standard., comparison of technics)

SPACKOVA, M.

CZECH

A new method for the estimation of heparin activity in vitro. Olga Bencsova, M. Spackova, A. Zabrodská, and A. Legernová (Kontrolní ústav farmak., Prague). *Časopis Lékařů Čechy* 93, 1274-7(1954).—Hog elutriated plasma with a recalcification time of 2-3 min. is used. Both the heparin standard and the unknown sample are mixed with CaCl_2 and plasma and the time of appearance of the firm clot is measured at 3 diln. levels. Coagulation times are plotted against the logarithm of dose and the activity of the unknown is estd. either by graphical methods or by numerical calens. for which a standard form is shown. Significance of the variance components between groups and between doses and assumption of linearity are tested by Snedecor's F factor. The advantage of the six point assay lies in the possibility of statistical analysis of the results of a single titration.

Ivo M. Hais

SPACKOVA) M

Relation between activity of digitoxin and some biological factors. B. Mosinger, M. Spackova, and P. Rulfer (Pharm. Control. Inst., Prague) Arch. exp. Pathol. Pharmacol. 230, 45-54 (1957). Young guinea pigs are more resistant against digitoxin than older animals. That calculation of the lethal dose with reference to body wt. increases the error. The influence of the higher resistance of young animals is eliminated if the dose is referred to body surface. This permits the use of animals of 100-800 g. A. B. M.

3

SPACKOVA, Sonu

Tradition is still alive (Jan Evangelista Purkyně). Cas. lek. česk.
98 no.35:1113-1115 28 Aug 59

1. Ustav pro doskolovani lekaru v Praze, prednosta prof. dr. J. Knobloch.
(BIOGRAPHIES)

Rumania/Inorganic Chemistry. Complex Compound.

C

Abs Jour : Ref Zhur-Khimiya, No 5, 1958, 13997.

Author : A. Spacu, Popeya Florika.

Inst : Not given

Title : Contribution to the Study of Chloriodides. Two New Classes of Compounds: Dichloriodimetalammins and Tetrachlorometalammines.

Orig Pub : Khim. Zhur. Akad. RNR., 1956, 1, No 1, 131-137

Abstract : By the introduction of crystalline $\text{NH}_4(\text{ICl}_4) \cdot 4\text{H}_2\text{O}(1)$ into an aqueous solutions of Co ammino-complexes and also by reactions in alcohol solutions or in aquaous solutions containing Cl_2 and HCl (or NH_4Cl) the salts of $\text{A}(\text{ICl}_2)$, where
 $\text{A-Trans}-(\text{CoCl}_2(\text{NH}_3)_4)$, $\text{trans- and cis}-(\text{CoCl}_2(\text{En})_2)$,
 $\text{trans-Co}(\text{NH}_3)_2(\text{DH})_2$, $\text{trans}-(\text{Co}(\text{C}_2\text{H}_5\text{NH}_2)_2(\text{DH})_2)$

Card 1/3

BC

PROCEDURES AND PROPERTIES INDEX

a-3

Handwritten text in the center of the page, mostly illegible due to heavy black redaction marks. The text appears to be a list or index of items, possibly related to metallurgical literature.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

Bottom section of the form containing classification codes and a grid of small boxes for data entry.

CO

6

PROCESS AND PROPERTIES INDEX

A study of the complex cuprous thiosulfates of ammonium, potassium and sodium. G. SPACU AND I. G. MURGULESCU. *Bul. soc. chim. Cluj* 5, 61-107 (1939).—The authors postulate the existence of 7 compds. of NH_4Cu thiosulfate. Methods of prep. and properties of 5 of these are given: (1) $[\text{Cu}_2(\text{S}_2\text{O}_3)_2](\text{NH}_4)_2 \cdot \text{H}_2\text{O}$, yellow cryst. or white amorphous, (2) $[\text{Cu}_2(\text{S}_2\text{O}_3)_2](\text{NH}_4)_2 \cdot 2\text{H}_2\text{O}$, white cryst., (3) $[\text{Cu}_2(\text{S}_2\text{O}_3)_2](\text{NH}_4)_2 \cdot 4\text{H}_2\text{O}$, white cryst., (4) $[\text{Cu}_2(\text{S}_2\text{O}_3)_2](\text{NH}_4)_2 \cdot 2\text{NH}_4\text{NO}_3$, white cryst., (5) $[\text{Cu}_2(\text{S}_2\text{O}_3)_2](\text{NH}_4)_2 \cdot 2\text{NH}_4\text{ClO}_4$, white cryst. These compds. were identified by breaks in the potentiometric titration curves. Evidence was also obtained from potentiometric titrations for the existence of 2 other compds., one a brown-violet in color and the other blue but the only data on their compn. were that they contained, within the mol., more NH_4 thiosulfate than compd. (1). Study of the oxidation reaction $\text{Cu}^{++} + 2\text{S}_2\text{O}_3^{--}$ led to the conclusion that cupric solns. of lower concn. than 1 M react with thiosulfate solns. of the same concn. to form exclusively the tetrathionate according to the equation: $2\text{Cu}^{++} + 2\text{S}_2\text{O}_3^{--} = 2\text{Cu}^+ + \text{S}_4\text{O}_6^{--}$. For higher concns. S is pptd. and the other products of oxidation are formed. It was not detd. whether these product of oxidation were formed by the same reaction or by some secondary oxidation from the tetrathionate. A potentiometric method for the detn. of Cu can be based on the formation of the first 2 compds. For concns. 0.01 to 0.2 M the titration ends with the formation of $[\text{Cu}_2(\text{S}_2\text{O}_3)_2](\text{NH}_4)_2$ and for concns. 0.5 to 1.0 M it ends with the formation of the compd. $[\text{Cu}_2(\text{S}_2\text{O}_3)_2](\text{NH}_4)_2$.

R. H. CARTER

ASAC-SEA METALLURGICAL LITERATURE CLASSIFICATION

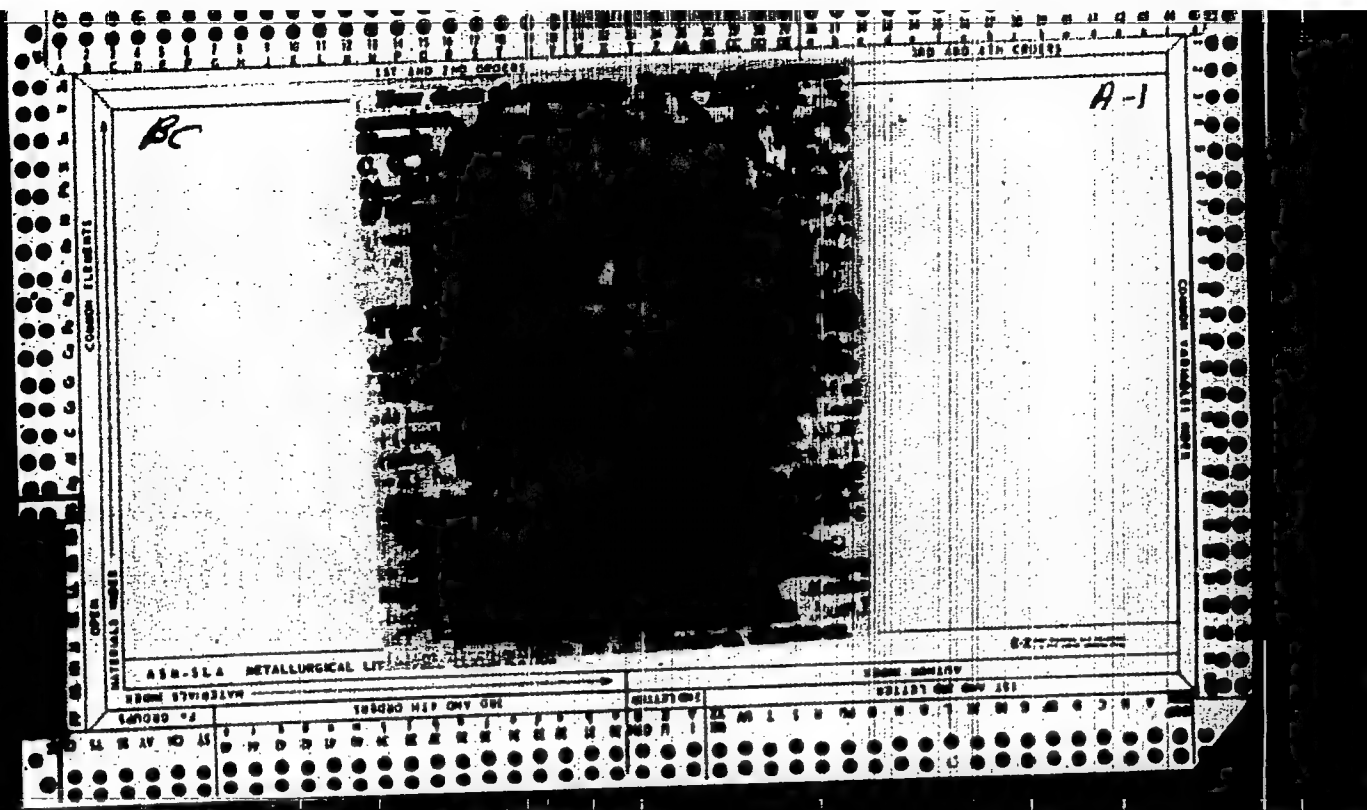
1ST AND 2ND SERIES		PROCESSES AND PROPERTIES INDEX	3RD AND 4TH SERIES
BC			a-1
<p>Complete characterization of copper with arsenic, iron, selenium, and sulfur. H. G. Stone and J. C. Macdonald. <i>Can. J. Chem.</i> 1959, 37, 254-259; <i>Chem. Rev.</i> 1959, 39, 259. The compounds $\text{Cu}_2\text{As}_2\text{S}_4$ and $\text{Cu}_2\text{As}_2\text{S}_6$ are described. In solution more concentrated than H_2O, interaction of arsenic and selenic acid ions affects sulfur and sulfur dioxide as well as trisulfide.</p> <p>A. A. Hanson.</p>			
ASS-SLA METALLURGICAL LITERATURE CLASSIFICATION			
SOURCE SYMBOL		SOURCE SYMBOL	
GROUP #1	GROUP #1000	GROUP #1000	GROUP #1000

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1ST AND 2ND COLUMNS		PROCESSING AND PROPERTIES INDEX	3RD AND 4TH COLUMNS
<p><i>BC</i></p>		<p><i>a-1</i></p> <p>Complete composition, processing, and properties information for the following materials: A. 244 B. 245 C. 246 D. 247 E. 248 F. 249 G. 250 H. 251 I. 252 J. 253 K. 254 L. 255 M. 256 N. 257 O. 258 P. 259 Q. 260 R. 261 S. 262 T. 263 U. 264 V. 265 W. 266 X. 267 Y. 268 Z. 269 AA. 270 AB. 271 AC. 272 AD. 273 AE. 274 AF. 275 AG. 276 AH. 277 AI. 278 AJ. 279 AK. 280 AL. 281 AM. 282 AN. 283 AO. 284 AP. 285 AQ. 286 AR. 287 AS. 288 AT. 289 AU. 290 AV. 291 AW. 292 AX. 293 AY. 294 AZ. 295 BA. 296 BB. 297 BC. 298 BD. 299 BE. 300 BF. 301 BG. 302 BH. 303 BI. 304 BJ. 305 BK. 306 BL. 307 BM. 308 BN. 309 BO. 310 BP. 311 BQ. 312 BR. 313 BS. 314 BT. 315 BU. 316 BV. 317 BW. 318 BX. 319 BY. 320 BZ. 321 CA. 322 CB. 323 CC. 324 CD. 325 CE. 326 CF. 327 CG. 328 CH. 329 CI. 330 CJ. 331 CK. 332 CL. 333 CM. 334 CN. 335 CO. 336 CP. 337 CQ. 338 CR. 339 CS. 340 CT. 341 CU. 342 CV. 343 CW. 344 CX. 345 CY. 346 CZ. 347 DA. 348 DB. 349 DC. 350 DD. 351 DE. 352 DF. 353 DG. 354 DH. 355 DI. 356 DJ. 357 DK. 358 DL. 359 DM. 360 DN. 361 DO. 362 DP. 363 DQ. 364 DR. 365 DS. 366 DT. 367 DU. 368 DV. 369 DW. 370 DX. 371 DY. 372 DZ. 373 EA. 374 EB. 375 EC. 376 ED. 377 EE. 378 EF. 379 EG. 380 EH. 381 EI. 382 EJ. 383 EK. 384 EL. 385 EM. 386 EN. 387 EO. 388 EP. 389 EQ. 390 ER. 391 ES. 392 ET. 393 EU. 394 EV. 395 EW. 396 EX. 397 EY. 398 EZ. 399 FA. 400 FB. 401 FC. 402 FD. 403 FE. 404 FF. 405 FG. 406 FH. 407 FI. 408 FJ. 409 FK. 410 FL. 411 FM. 412 FN. 413 FO. 414 FP. 415 FQ. 416 FR. 417 FS. 418 FT. 419 FU. 420 FV. 421 FW. 422 FX. 423 FY. 424 FZ. 425 GA. 426 GB. 427 GC. 428 GD. 429 GE. 430 GF. 431 GG. 432 GH. 433 GI. 434 GJ. 435 GK. 436 GL. 437 GM. 438 GN. 439 GO. 440 GP. 441 GQ. 442 GR. 443 GS. 444 GT. 445 GU. 446 GV. 447 GW. 448 GX. 449 GY. 450 GZ. 451 HA. 452 HB. 453 HC. 454 HD. 455 HE. 456 HF. 457 HG. 458 HH. 459 HI. 460 HJ. 461 HK. 462 HL. 463 HM. 464 HN. 465 HO. 466 HP. 467 HQ. 468 HR. 469 HS. 470 HT. 471 HU. 472 HV. 473 HW. 474 HX. 475 HY. 476 HZ. 477 IA. 478 IB. 479 IC. 480 ID. 481 IE. 482 IF. 483 IG. 484 IH. 485 II. 486 IJ. 487 IK. 488 IL. 489 IM. 490 IN. 491 IO. 492 IP. 493 IQ. 494 IR. 495 IS. 496 IT. 497 IU. 498 IV. 499 IW. 500 IX. 501 IY. 502 IZ. 503 JA. 504 JB. 505 JC. 506 JD. 507 JE. 508 JF. 509 JG. 510 JH. 511 JI. 512 JJ. 513 JK. 514 JL. 515 JM. 516 JN. 517 JO. 518 JP. 519 JQ. 520 JR. 521 JS. 522 JT. 523 JU. 524 JV. 525 JW. 526 JX. 527 JY. 528 JZ. 529 KA. 530 KB. 531 KC. 532 KD. 533 KE. 534 KF. 535 KG. 536 KH. 537 KI. 538 KJ. 539 KK. 540 KL. 541 KM. 542 KN. 543 KO. 544 KP. 545 KQ. 546 KR. 547 KS. 548 KT. 549 KU. 550 KV. 551 KW. 552 KX. 553 KY. 554 KZ. 555 LA. 556 LB. 557 LC. 558 LD. 559 LE. 560 LF. 561 LG. 562 LH. 563 LI. 564 LJ. 565 LK. 566 LL. 567 LM. 568 LN. 569 LO. 570 LP. 571 LQ. 572 LR. 573 LS. 574 LT. 575 LU. 576 LV. 577 LW. 578 LX. 579 LY. 580 LZ. 581 MA. 582 MB. 583 MC. 584 MD. 585 ME. 586 MF. 587 MG. 588 MH. 589 MI. 590 MJ. 591 MK. 592 ML. 593 MN. 594 MO. 595 MP. 596 MQ. 597 MR. 598 MS. 599 MT. 600 MU. 601 MV. 602 MW. 603 MX. 604 MY. 605 MZ. 606 NA. 607 NB. 608 NC. 609 ND. 610 NE. 611 NF. 612 NG. 613 NH. 614 NI. 615 NJ. 616 NK. 617 NL. 618 NO. 619 NP. 620 NQ. 621 NR. 622 NS. 623 NT. 624 NU. 625 NV. 626 NW. 627 NX. 628 NY. 629 NZ. 630 OA. 631 OB. 632 OC. 633 OD. 634 OE. 635 OF. 636 OG. 637 OH. 638 OI. 639 OJ. 640 OK. 641 OL. 642 OM. 643 ON. 644 OO. 645 OP. 646 OQ. 647 OR. 648 OS. 649 OT. 650 OU. 651 OV. 652 OW. 653 OX. 654 OY. 655 OZ. 656 PA. 657 PB. 658 PC. 659 PD. 660 PE. 661 PF. 662 PG. 663 PH. 664 PI. 665 PJ. 666 PK. 667 PL. 668 PM. 669 PN. 670 PO. 671 PP. 672 PQ. 673 PR. 674 PS. 675 PT. 676 PU. 677 PV. 678 PW. 679 PX. 680 PY. 681 PZ. 682 QA. 683 QB. 684 QC. 685 QD. 686 QE. 687 QF. 688 QG. 689 QH. 690 QI. 691 QJ. 692 QK. 693 QL. 694 QM. 695 QN. 696 QO. 697 QP. 698 QQ. 699 QR. 700 QS. 701 QT. 702 QU. 703 QV. 704 QW. 705 QX. 706 QY. 707 QZ. 708 RA. 709 RB. 710 RC. 711 RD. 712 RE. 713 RF. 714 RG. 715 RH. 716 RI. 717 RJ. 718 RK. 719 RL. 720 RM. 721 RN. 722 RO. 723 RP. 724 RQ. 725 RR. 726 RS. 727 RT. 728 RU. 729 RV. 730 RW. 731 RX. 732 RY. 733 RZ. 734 SA. 735 SB. 736 SC. 737 SD. 738 SE. 739 SF. 740 SG. 741 SH. 742 SI. 743 SJ. 744 SK. 745 SL. 746 SM. 747 SN. 748 SO. 749 SP. 750 SQ. 751 SR. 752 SS. 753 ST. 754 SU. 755 SV. 756 SW. 757 SX. 758 SY. 759 SZ. 760 TA. 761 TB. 762 TC. 763 TD. 764 TE. 765 TF. 766 TG. 767 TH. 768 TI. 769 TJ. 770 TK. 771 TL. 772 TM. 773 TN. 774 TO. 775 TP. 776 TQ. 777 TR. 778 TS. 779 TU. 780 TV. 781 TW. 782 TX. 783 TY. 784 TZ. 785 UA. 786 UB. 787 UC. 788 UD. 789 UE. 790 UF. 791 UG. 792 UH. 793 UI. 794 UJ. 795 UK. 796 UL. 797 UM. 798 UN. 799 UO. 800 UP. 801 UQ. 802 UR. 803 US. 804 UT. 805 UV. 806 UW. 807 UX. 808 UY. 809 UZ. 810 VA. 811 VB. 812 VC. 813 VD. 814 VE. 815 VF. 816 VG. 817 VH. 818 VI. 819 VJ. 820 VK. 821 VL. 822 VM. 823 VN. 824 VO. 825 VP. 826 VQ. 827 VR. 828 VS. 829 VT. 830 VU. 831 VV. 832 VW. 833 VX. 834 VY. 835 VZ. 836 WA. 837 WB. 838 WC. 839 WD. 840 WE. 841 WF. 842 WG. 843 WH. 844 WI. 845 WJ. 846 WK. 847 WL. 848 WM. 849 WN. 850 WO. 851 WP. 852 WQ. 853 WR. 854 WS. 855 WT. 856 WU. 857 WV. 858 WX. 859 WY. 860 WZ. 861 XA. 862 XB. 863 XC. 864 XD. 865 XE. 866 XF. 867 XG. 868 XH. 869 XI. 870 XJ. 871 XK. 872 XL. 873 XM. 874 XN. 875 XO. 876 XP. 877 XQ. 878 XR. 879 XS. 880 XT. 881 XU. 882 XV. 883 XW. 884 XX. 885 XY. 886 XZ. 887 YA. 888 YB. 889 YC. 890 YD. 891 YE. 892 YF. 893 YG. 894 YH. 895 YI. 896 YJ. 897 YK. 898 YL. 899 YM. 900 YN. 901 YO. 902 YP. 903 YQ. 904 YR. 905 YS. 906 YT. 907 YU. 908 YV. 909 YW. 910 YX. 911 YZ. 912 ZA. 913 ZB. 914 ZC. 915 ZD. 916 ZE. 917 ZF. 918 ZG. 919 ZH. 920 ZI. 921 ZJ. 922 ZK. 923 ZL. 924 ZM. 925 ZN. 926 ZO. 927 ZP. 928 ZQ. 929 ZR. 930 ZS. 931 ZT. 932 ZU. 933 ZV. 934 ZW. 935 ZX. 936 ZY. 937 ZZ. 938</p>	<p>ASM-15A METALLURGICAL LITERATURE CLASSIFICATION</p>

1ST AND 2ND EDITIONS										3RD AND 4TH EDITIONS									
PROCESSING AND PROPERTIES INDEX																			
<div style="position: relative;"> <div style="position: absolute; top: 10px; left: 10px;">BC</div> <div style="position: absolute; top: 10px; right: 10px;">a-1</div> <div style="position: absolute; top: 50px; left: 50px; width: 80%; height: 80%; border: 1px solid black; padding: 5px;"> <p>Homogeneous and heterogeneous complex salts in solution. A. R. R. and P. R. R. (Int. Rev. Phys. Chem. 1957-1958; Chem. Rev. 1957-1958). The following compounds are listed:</p> <p>[List of chemical compounds and their properties]</p> <p>A. A. R. R. R.</p> </div> </div>																			
A. A. R. R. R. METALLURGICAL LITERATURE CLASSIFICATION																			
1ST EDITION										2ND EDITION									
1ST EDITION										2ND EDITION									

[illegible]



Aminines corresponding to the class of complex thiocyanates. (1) $\text{Sr}(\text{SCN})_6$ and $\text{Ca}(\text{SCN})_6$. *Anal. and synth.* *Chim.* 6, 238 (1911) [in French]; *ibid.* 7, 25, 362. A continuation of the previous work has led to the isolation of the 2 new double aminines: $[\text{Ag}(\text{SCN})_2]_2[\text{Co en}]$, and $[\text{Ag}(\text{SCN})_2]_2[\text{Cr en}]$ (where en = ethylene diamine). The formation of the anion $[\text{Ag}(\text{SCN})_2]$ takes place only in the presence of a large excess of NH_4SCN , only under these conditions do the double aminines sep. out pure; in the form of well-developed crystals. Under the same conditions, the compound $[\text{Ag}(\text{SCN})_2]_2[\text{Co}(\text{NH}_3)_6]\text{Cl}$ has been obtained. The following have also been prepd.: $[\text{Zn}(\text{SCN})_2]_2[\text{Co en}]$, $[\text{SCN}]$, $[\text{Hg}(\text{SCN})_2]_2[\text{Cr en}]$, $[\text{Hg}(\text{SCN})_2]_2[\text{Co}(\text{NH}_3)_6]$, as well as $[\text{Hg}(\text{SCN})_2]_2[\text{Co en Cl}]$ (1, 6). By double decomp. in aq. soln., between previously formed anions and cations, the following double aminines, corresponding to complex anions of Cr have been prepd.: $[\text{Cr}(\text{SCN})_2]_2[\text{Zn en}]$, $[\text{Cr}(\text{SCN})_2]_2[\text{Co en}]$, $[\text{Cr}(\text{SCN})_2]_2[\text{Co en Cl}]$ (1, 6), $[\text{Cr}(\text{SCN})_2]_2[\text{Cu en}]$, $[\text{Cr}(\text{SCN})_2]_2[\text{Ni en}] 2\text{H}_2\text{O}$, $[\text{Cr}(\text{SCN})_2]_2[\text{Cd en}]$, $[\text{Cr}(\text{SCN})_2]_2[\text{Co en}]$, $[\text{Cr}(\text{SCN})_2]_2[\text{Co en Cl}]$ (1, 6), $[\text{Cr}(\text{SCN})_2]_2[\text{Co en}]$, $[\text{Cr}(\text{SCN})_2]_2[\text{Ni en}] 2\text{H}_2\text{O}$, $[\text{Cr}(\text{SCN})_2]_2[\text{Co en}]$, $[\text{Cr}(\text{SCN})_2]_2[\text{Co en Cl}]$ (1, 6), $[\text{Cr}(\text{SCN})_2]_2[\text{Co en Cl}]$ (1, 2), $[\text{Cr}(\text{SCN})_2]_2[\text{Cr en}]$. The existence of the following anions in soln. was established: $[\text{Mn}(\text{SCN})_4]^-$ and $[\text{Mn}(\text{SCN})_5]^-$. The amines $[\text{Mn}(\text{SCN})_4]^-$ $[\text{Cu en}]$, $[\text{Mn}(\text{SCN})_5]^-$ $[\text{Cd en}] 2\text{H}_2\text{O}$ and $[\text{Mn}(\text{SCN})_5]^-$ $[\text{Ni en}]$ were prepd. Their color depends on that of the complex cation used, since the Mn complex cyanate is colorless. I. J. PATTON.

The amines corresponding to the class of the complex thiocyanates. *Revue de Chimie Minérale* (Paris), 42, 411 (1965) (French). This is a study of the solubility in aq. soln. of complex thiocyanate cations by means of complex amines. Its object was the development of reagents which might be used in investigating the types of complex thiocyanate ions which exist in aq. soln., and the detg. of the types of double amines which can be derived from them. The amines used were $[Ni(en)_2]Cl_2 \cdot 2H_2O$, $[Ni(en)_2](NO_3)_2$, $[Zn(en)_2]Cl_2 \cdot 2H_2O$, $[Cu(en)_2]SO_4$, $[Co(en)_2]Cl_2 \cdot 2H_2O$ and $[Cd(en)_2]Cl_2$; en = ethylenediamine. Their reactions by double decomposition with alkali metal salts of the complex thiocyanates of Ag, Zn, Cd, Hg, Cr and Ni were detd. Not all of the several complex thiocyanate ions of each of these elements were pptd. in aq. soln. as double amines, the following new compds. being those that were obtained: $[Co(en)_2][Ag(CNS)_2]$, dark violet, acicular crystals; $[Ni(en)_2][Ag(CNS)_2]$, rose colored, acicular crystals; $[Co(en)_2][Zn(CNS)_2]$, mauve, cryst. powder; $[Zn(en)_2][Zn(CNS)_2]$, white, cryst. ppt.; $[Cd(en)_2][Cd(CNS)_2]$, white ppt.; $[Zn(en)_2][Hg(CNS)_2]$, mauve, cryst. ppt.; $[Ni(en)_2][Hg(CNS)_2]$, rose-violet, cryst. ppt.; $[Zn(en)_2][Hg(CNS)_2]$, white, cryst. ppt.; $[Cd(en)_2][Hg(CNS)_2]$, white ppt.; $[Hg(en)_2][Hg(CNS)_2]$, white, acicular crystals; $[Co(en)_2][Hg(CNS)_2]$, forms slowly as large orange crystals; $[Ni(en)_2][Ni(CNS)_2]$, forms slowly as large mauve crystals; $[Co(en)_2][Cr(CNS)_3]$, mauve, cryst. powder; $[Cd(en)_2][Cr(CNS)_3]$, rose gray, cryst. ppt.; $[Zn(en)_2][Cr(NH_3)_6]$, rose colored ppt. These compds. are usually sol. in acetone and pyridine, but infrequently so in the usual org. solvents, $CHCl_3$, ether, alc. and benzene.

R. S. LAMMARD

1ST AND 2ND SERIES

105 AND 4TH SERIES

COMMON ELEMENTS

COMMON METALLIC ELEMENTS

METALLIC LITERATURE CLASSIFICATION

METALLIC LITERATURE

METALLIC LITERATURE

[illegible]

A new class of ammine-simple acetylenamines. VI. G. SPACH AND C. GIL MACAROVICI. *Bul. soc. chim. Cluj* 9, 401-10(1932); cf. C. A. 26, 634. The following new compds. are described (Iy = pyridine, Tld = thiodine, Phyl = phenylhydrazine): $[CdTld_2Py_2](SeCN)_2$ from $[CdTld_2](SeCN)_2$ and Iy in petr. ether; $[ZnHyd_2Py_2](SeCN)_2$ from $[ZnTld_2](SeCN)_2$ and $[MnTld_2Py_2](SeCN)_2$ from $[MnTld_2](SeCN)_2$ in the same way; $[CoPhyd_2](SeCN)_2$ from EtOH solns. of $Co(NO_3)_2 \cdot (H_2O)_6$, KCNSe and Phyl successively mixed. The latter compd. is spontaneously combustible in H_2O , KCNSe and Phyl successively mixed. The latter compd. is spontaneously combustible burning without flame. $[NiPhyd_2](SeCN)_2$, stable in the air; $[CAPHyd_2](SeCN)_2$ fusible burning without flame. $[NiPhyd_2](SeCN)_2$ and $[MnPhyd_2](SeCN)_2$ were also formed.

ALFRED HUFFMAN

ALFRED HOFFMAN

4.1.2.1 METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND GROUPS

PRINCIPLES AND PROPERTIES MOSES

3RD AND 4TH GROUPS

COMMON ELEMENTS

COMMON VARIABLE MOSES

3RD AND 4TH GROUPS

PRINCIPLES AND PROPERTIES MOSES

107 AND 108 (REV 10/68) PROCESSED AND FORWARDED HERE 107 AND 108 (REV 10/68)

bc H1

107 AND 108 (REV 10/68) PROCESSED AND FORWARDED HERE 107 AND 108 (REV 10/68)

27

PROCESS AND PROPERTIES INDEX

The class of amines of thiocyanates with benzidine and tolidine. IV. G. Spach and C. Gh. Macarovic. *Rul. soc. stiinta Cluj* 7, 227-47 (1963); cf. C. A. 27, 2447 (1963). Benzidine and tolidine derivs. of Co, Ni, Cu, Mn, Zn and Mg thiocyanates are described. They were synthesized by using alc. solns. of the constituents. An alc. soln. of Ni-(NO)₂·6H₂O and KCNS on treatment with benzidine (Bd) yields [NiBd_x(H₂O)₄](SCN)_x·xH₂O, where $x \approx 1, 2, 3$ or 4 according to the conditions of drying. [NiBd₁](SCN)₁ was obtained by holding the material at 75° over P₂O₅. Cd(SCN)₂ gave [CdBd](SCN)₁, completely anhyd. [ZnBd₂(H₂O)₁](SCN)₁·1.5H₂O and the anhyd. salt were prepd. [MnBd₂](SCN)₂·H₂O was obtained. In all the above compds. benzidine occupies 2 coordination positions. In the Mg compds. [MgBd₂(H₂O)₂](SCN)₂·4H₂O, [MgBd₂(H₂O)₂](SCN)₂ and [MgBd₂](SCN)₂ the base occupies a single coordination position. The compd. contg. two mols. of H₂O can be left for days in contact with pyridine, with no change, but the anhyd. form adds two mols. of pyridine. A similar series of tolidine compds. was prepd. with the exception of the Mg compd. In these the base occupies a single coordination position, and the H₂O is more loosely bound than in the corresponding benzidine compds. None of the compds. is sol. in cold H₂O, and all are decomposed by hot H₂O. Most of them are sol. in EtOH and Me₂CO, and all are sol. in Et₂O, CHCl₃ and C₆H₆. The SCN compds. do not agree in all behavior with the SeCN compds. but are, on the whole, similar. C. B. P. Jeffrey

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

[illegible]

Volumetric Determination of cobalt. G. Spurr
and E. Kened (Ind. Eng. Chem., 1904, 7, 877-
880; Chem. Abst.: 1905, 1, 689). Co in ppt. with
O.I.F.A.M. solution. Co in the sample (Co₂O₃)
(Co₂C₂H₂O₄) and volume of HCl gas deter-
mined with O.I.F.A.M. using 2500 cc. Fe(NH₄)₂(SO₄)₆ as indicator. The method is applicable
in presence of all elements not pptd. under these
conditions. H. J. E.

REFRACTOMETRIC STUDY OF THE FORMATION, IN AQUEOUS SOLUTION, OF A HIGHER ORDER OF COMPOUNDS HITHERTO CALLED DOUBLE SALTS. I. G. Spacy and H. Popper. <i>Ref. no. 11000</i> (1964). A refractometric study of aq. solns. containing two salts gave the anions corresponding to the following compds.: $K_2[HgCl_4]$; $Na_2[HgCl_4]$; $Na_2[HgCl_4]$; $K_2[Hg(SCN)_4]$; $K_2[Hg(CrO_4)_2]$; $(NH_4)_2[Hg(CrO_4)_2]$; $Co_2[HgCl_4](H_2O)_2$; K_2MgCl_4 ; $NH_4[MgCl_4]$; $K_2[CuCl_4]$; $K_2[CuCl_4]$; $K_2[CuCl_4]$; $K_2[CuCl_4]$; $K_2[CuCl_4]$; $K_2[CuCl_4]$; $K_2[CuCl_4]$; $K_2[CuCl_4]$. In addition to these anions, the simple ions exist also, as well as undissociated molts. Curves and tables are given. The work is being continued. I. J. Patton																									
ASAC-114 METALLURGICAL LITERATURE CLASSIFICATION																									

[illegible]

RC

1ST AND 2ND ORDERS

PROCESS AND PROPERTIES INDEX

3RD AND 4TH ORDERS

A-3

Significance of yellow coloration in these systems. C. H. H. and C. H. H. (Ind. Eng. Chem. Anal. Ed. 1934, 6, 404-405). Chem. Ind. 1934, 1, 1014. An improved method of prep. is given.

655-554 METALLURGICAL LITERATURE CLASSIFICATION

FROM STUDY

FROM STUDY

FROM STUDY

FROM STUDY

Redoxmetric study of the formation, in aqueous solution, of a higher order of compounds hitherto called double salts. H. G. Jones and E. Hopper. *Nat. Sci. (Lond.)* 6-12 (1964). Cf. C. A. 28, 3400. — A continuation of the redoxmetric study of aq. solns. contg. 2 salts (cf. C. A. 20, 1314; 22, 1317) gave the following compds., neglecting the H₂O of hydration: [CuCl]₂[Cd] or [CuCl]₂[Co]; [NiCl]₂[Cd] or [CdCl]₂[Ni]; [CoCl]₂[Cd] or [CdCl]₂[Co]; [MnCl]₂[Cd] or [CdCl]₂[Mn]; [BaCl]₂[Cd] or [CdCl]₂[Ba]; [CaCl]₂[Ba] or [BaCl]₂[Ca]; [CdCl]₂[Ba]; [Cu(SO₄)₂]₂[K]; [Cu(SO₄)₂]₂[Mg]; [Al(SO₄)₃]₂[K]; [CuCl]₂[K]; [FeCl]₂[K]; [BaCl]₂[K]; [CdCl]₂[K]; and [Ba (H₂O)₂]₂[K]. The following systems give no higher-order compds. in aq. soln.: NaCl + BaCl₂; K₂SO₄ + NH₄Cl; KI + KCl; KCl + CaCl₂; and KCl + KCl. The mol. refraction of each constituent agree with diverse previous data. The results are given in 57 extensive tables and 19 figures. Victor Hicks.

AS 55.5.0 METALLURGICAL LITERATURE CLASSIFICATION

COMMON ELEMENTS		COMMON VARIABLES INDEX	
<p>77</p> <p>9</p> <p>*A New Volumetric Method for the Indirect Determination of Zinc. J. S. S. and C. G. Macanovic (<i>Bul. Ser. Stinta Cluj</i>, 1934, 8, 129-139; <i>CA</i>, 1935, 100, 1, 1422-1423).—The method depends on the precipitation of the Zn by addition of a known volume of 0.1N-NH₄CNS solution and C₆H₅N, filtration of an aliquot part of the solution, and titration of the excess of NH₄CNS with AgNO₃ after neutralization of the solution with HNO₃. —A. R. P.</p>		<p>ASU-5LA METALLURGICAL LITERATURE CLASSIFICATION</p>	
<p>FROM SYNTHESE</p>		<p>FROM SYNTHESE</p>	
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PRECEDENTS AND PROPOSED INDEX																																																																																																					
<p>777</p> <p>*New Volumetric Method for the Determination of Nickel. (I. Senca and V. Armeanu (<i>Bul. Soc. chim. Cluj</i>, 1955, 8, 208-210; <i>C. Abstr.</i>, 1956, 50, 1895). ---The method resembles in principle the KCN method of Moore; the titrating KCN solution contains pyridine (Py). On adding this reagent to a Ni solution a light violet precipitate is formed according to the equation: $\text{Ni}^{2+} + \text{Py} + \text{H}_2\text{O} + \text{KCN} \rightarrow [\text{NiPyH}_2\text{O}(\text{CN})_2]$ and the precipitate dissolves in excess KCN to form $[\text{Ni}(\text{CN})_4]^{2-}$. Directions are given for carrying out the estimation of Ni by both a direct and an indirect method, the reagent used being a solution containing 20 gram. of KCN and 10 c.c. of pyridine per litre.---N. B. V.</p>																																																																																																					
AS-5LA METALLURGICAL LITERATURE CLASSIFICATION																																																																																																					
<table border="1"> <tr> <td>GROUP 1</td> <td>GROUP 2</td> <td>GROUP 3</td> <td>GROUP 4</td> <td>GROUP 5</td> <td>GROUP 6</td> <td>GROUP 7</td> <td>GROUP 8</td> <td>GROUP 9</td> <td>GROUP 10</td> <td>GROUP 11</td> <td>GROUP 12</td> <td>GROUP 13</td> <td>GROUP 14</td> <td>GROUP 15</td> <td>GROUP 16</td> <td>GROUP 17</td> <td>GROUP 18</td> <td>GROUP 19</td> <td>GROUP 20</td> <td>GROUP 21</td> <td>GROUP 22</td> <td>GROUP 23</td> <td>GROUP 24</td> <td>GROUP 25</td> <td>GROUP 26</td> <td>GROUP 27</td> <td>GROUP 28</td> <td>GROUP 29</td> <td>GROUP 30</td> <td>GROUP 31</td> <td>GROUP 32</td> <td>GROUP 33</td> <td>GROUP 34</td> <td>GROUP 35</td> <td>GROUP 36</td> <td>GROUP 37</td> <td>GROUP 38</td> <td>GROUP 39</td> <td>GROUP 40</td> <td>GROUP 41</td> <td>GROUP 42</td> <td>GROUP 43</td> <td>GROUP 44</td> <td>GROUP 45</td> <td>GROUP 46</td> <td>GROUP 47</td> <td>GROUP 48</td> <td>GROUP 49</td> <td>GROUP 50</td> <td>GROUP 51</td> <td>GROUP 52</td> <td>GROUP 53</td> <td>GROUP 54</td> <td>GROUP 55</td> <td>GROUP 56</td> <td>GROUP 57</td> <td>GROUP 58</td> <td>GROUP 59</td> <td>GROUP 60</td> <td>GROUP 61</td> <td>GROUP 62</td> <td>GROUP 63</td> <td>GROUP 64</td> <td>GROUP 65</td> <td>GROUP 66</td> <td>GROUP 67</td> <td>GROUP 68</td> <td>GROUP 69</td> <td>GROUP 70</td> <td>GROUP 71</td> <td>GROUP 72</td> <td>GROUP 73</td> <td>GROUP 74</td> <td>GROUP 75</td> <td>GROUP 76</td> <td>GROUP 77</td> <td>GROUP 78</td> <td>GROUP 79</td> <td>GROUP 80</td> <td>GROUP 81</td> <td>GROUP 82</td> <td>GROUP 83</td> <td>GROUP 84</td> <td>GROUP 85</td> <td>GROUP 86</td> <td>GROUP 87</td> <td>GROUP 88</td> <td>GROUP 89</td> <td>GROUP 90</td> <td>GROUP 91</td> <td>GROUP 92</td> <td>GROUP 93</td> <td>GROUP 94</td> <td>GROUP 95</td> <td>GROUP 96</td> <td>GROUP 97</td> <td>GROUP 98</td> <td>GROUP 99</td> <td>GROUP 100</td> </tr> </table>		GROUP 1	GROUP 2	GROUP 3	GROUP 4	GROUP 5	GROUP 6	GROUP 7	GROUP 8	GROUP 9	GROUP 10	GROUP 11	GROUP 12	GROUP 13	GROUP 14	GROUP 15	GROUP 16	GROUP 17	GROUP 18	GROUP 19	GROUP 20	GROUP 21	GROUP 22	GROUP 23	GROUP 24	GROUP 25	GROUP 26	GROUP 27	GROUP 28	GROUP 29	GROUP 30	GROUP 31	GROUP 32	GROUP 33	GROUP 34	GROUP 35	GROUP 36	GROUP 37	GROUP 38	GROUP 39	GROUP 40	GROUP 41	GROUP 42	GROUP 43	GROUP 44	GROUP 45	GROUP 46	GROUP 47	GROUP 48	GROUP 49	GROUP 50	GROUP 51	GROUP 52	GROUP 53	GROUP 54	GROUP 55	GROUP 56	GROUP 57	GROUP 58	GROUP 59	GROUP 60	GROUP 61	GROUP 62	GROUP 63	GROUP 64	GROUP 65	GROUP 66	GROUP 67	GROUP 68	GROUP 69	GROUP 70	GROUP 71	GROUP 72	GROUP 73	GROUP 74	GROUP 75	GROUP 76	GROUP 77	GROUP 78	GROUP 79	GROUP 80	GROUP 81	GROUP 82	GROUP 83	GROUP 84	GROUP 85	GROUP 86	GROUP 87	GROUP 88	GROUP 89	GROUP 90	GROUP 91	GROUP 92	GROUP 93	GROUP 94	GROUP 95	GROUP 96	GROUP 97	GROUP 98	GROUP 99	GROUP 100
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1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
<p><i>m</i></p> <p><i>9</i></p> <p>A New Method for the Colorimetric Estimation of Cobalt. G. Spacu and C. Ch. Macarovici (<i>Bul. Soc. Stiinta Cluj</i>, 1933, 8, (2), 243-256; <i>Chim. et Ind.</i>, 1937, 37, (4), 653).—Into two beakers pour respectively equal quantities (10 to 15 c.c.) of the solution under examination and of a standard solution. To each add 0.5 cm.³ of a 1% alcoholic solution of dimethylglyoxime. Agitate the solution and then add 0.2 cm.³ of 1% alcoholic solution of benzidine or toluidine. Allow to stand for 5 minutes and then compare. The colour obtained with toluidine is deeper than that with benzidine. The sensitivity is said to be about 1:4,000,000.—W. A. C. N.</p>																			
ASD-54 METALLURGICAL LITERATURE CLASSIFICATION																			
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1ST AND 2ND GROUPS													3RD AND 4TH GROUPS												
PROCESSING AND PROPERTIES INDEX																									
<div style="display: flex; justify-content: space-between;"> Be A-1 </div> <p> / Annals of the Roumanian black salt series. G. STAN and V. ANASTAS (Bul. Soc. Miniere Cluj, 1958, 6, 299-300; Chem. Zvesti., 1958, 1, 4898- 4897). The salts $(Co(NH_4)_2Cl)_n$; $(Co en)_n$; $2H_2O$; $1:2 (Co en)_2Cl$; $1:2 (Co en)_2(NO_3)_2$; $1:2$ $(Co en)_2(OH)_2$, and enH_2O, where $R =$ $(Fe_2R_2(NO_3)_2)$, are described. J. S. A. </p>																									
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POTENTIOMETRIC DETERMINATION OF SULFITES. G. Spacu and C. Drăgulescu. *Z. anal. Chem.* 100, 270-63 (1935).-- The reaction used is $\text{SO}_3^{2-} + 2 \text{Ag}^+ = \text{Ag}_2\text{SO}_3$. To prevent atm. oxidation of the SO_3^{2-} the work is carried out under an indifferent gas, and to prevent compds other than Ag_2SO_3 from being formed, the titration is carried out in the presence of alk. The p. d. between a wire of Ag and the calomel electrode is measured. W. T. H.

ASME SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESS AND PROPERTIES INDEX																			
<p><i>BC</i> <i>D-1</i></p> <p>Polymolecular complex chromates. G. SPACU and M. VANURA (Bul. Soc. Minero Chim., 1936, 8, 333-347; Chem. Zentr., 1937, i, 1903-1906; cf. A., 1936, 848).—The following salts, obtained by double decomp. from $(\text{NH}_4)_2\text{A}$</p> <p>$\left\{ \text{A} = \left[(\text{C}_2\text{O}_4)_2\text{Cr} \begin{array}{c} \text{OH} \\ \text{OH} \end{array} \text{Cr} (\text{C}_2\text{O}_4)_2 \right] \right\}$, are described:</p> <p>$[\text{Co en} (\text{Cl})_2] \cdot \text{A} \cdot 9\text{H}_2\text{O}$; $[\text{Co} (\text{NH}_3)_4 \text{Cl}] \cdot \text{A} \cdot 6\text{H}_2\text{O}$, $[\text{Co} (\text{NH}_3)_4 \text{NO}_2] \cdot \text{A} \cdot 7\text{H}_2\text{O}$; $[\text{Co} (\text{NH}_3)_4] \cdot \text{A} \cdot 22\text{H}_2\text{O}$, $[\text{Co en}_2] \cdot \text{A} \cdot 4\text{H}_2\text{O}$; $[\text{Co} (\text{NH}_3)_4 \text{Cl}] \cdot \text{A} \cdot 6\text{H}_2\text{O}$, $[\text{Co} (\text{NH}_3)_4 \text{SCN}] \cdot \text{A} \cdot 7\text{H}_2\text{O}$; $[\text{Co} (\text{NH}_3)_4] \cdot \text{A} \cdot 5\text{H}_2\text{O}$, $[\text{Co} (\text{Co en}_2 (\text{OH}))_2] \cdot \text{A} \cdot 36\text{H}_2\text{O}$; $[\text{Co} (\text{NH}_3)_4 \text{NO}_2] \cdot \text{A} \cdot 6\text{H}_2\text{O}$. A. J. E. W.</p>																			
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<p><i>m</i></p> <p style="text-align: right;"><i>9</i></p> <p>A Method for Simultaneous Determination of Cobalt and Nickel. G. Spacu and C. Ch. Macarovici (<i>Bul. Soc. Stiinta Cluj</i>, 1938, 3, (3), 444-447; <i>Chim. et Ind.</i>, 1938, 30, 447).—In a part of the solution Ni and Co are determined together after precipitation as $[\text{CoPy}_2](\text{SCN})_2$ and $[\text{NiPy}_2](\text{SCN})_2$. In an aliquot part of the solution, the Ni content is determined by Brunck's or Liebig's method, so that the Co content can be calculated.—D. S.</p>																																																																													
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13C

A-1

PREPARED AND PRESENTED BY: D. F. R.

NEW class of compounds. Complex thioarsenates. O. S. G. and A. For (Bull. Acad. Sci. Roumanie, 1967, 10, 117-121; cf. A. 1930, 1, 322, 328).—The following compounds have been prepared from $\text{Na}_2\text{As}_2\text{S}_5$: $(\text{CrO}_4)_2\text{As}_2\text{S}_5$; $(\text{UO}_2)_2\text{As}_2\text{S}_5$; $(\text{Co}(\text{NH}_3)_6)_2\text{As}_2\text{S}_5$; $(\text{Cr}(\text{NH}_3)_6)_2\text{As}_2\text{S}_5$; $(\text{Ni}(\text{NH}_3)_6)_2\text{As}_2\text{S}_5$; $(\text{Co}(\text{NH}_3)_6)_2\text{As}_2\text{S}_5$; $(\text{Ni}(\text{NH}_3)_6)_2\text{As}_2\text{S}_5$; $(\text{Co}(\text{NH}_3)_6)_2\text{As}_2\text{S}_5$; $(\text{Ni}(\text{NH}_3)_6)_2\text{As}_2\text{S}_5$. The prop. of the last four compounds suggests the existence of the $[\text{As}_2\text{S}_5]^{2-}$ ion rather than $[\text{As}_2(\text{H}_2\text{O})_2]^{2-}$ prepared by Brinzing and Oswald.

D. F. R.

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

FROM SYNOPTIC

TOBIOU HIO GUY GDE

COLLISION

FROM SYNOPTIC

TOBIOU HIO GUY GDE

1ST AND 2ND QUANTILES										3RD AND 4TH QUANTILES									
PROCESSES AND PROPERTIES INDEX																			
<p><i>BC</i> <i>A-1</i></p> <p>Constitution of heteropoly-acids. I. Com- plex phosphodichromates. O. SEATY and V. NIKOLAIENKO (Dok. Akad. Nauk SSSR, 1958, 8, 25 55).—Using phosphodichromic acid, $(P(Mo_2O_7)_3)_n \cdot 3nH_2O$, 8 new complexes have been obtained:—</p> <p> $cis-[P(Mo_2O_7)_3]_2[CrO_4] \cdot 1.5H_2O$; $[P(Mo_2O_7)_3]_2[CrO_4] \cdot 1.7H_2O$; $[P(Mo_2O_7)_3]_2[CrO_4] \cdot 1.5H_2O$; $[P(Mo_2O_7)_3]_2[CrO_4] \cdot 1.5H_2O$; $[P(Mo_2O_7)_3]_2[CrO_4] \cdot 1.5H_2O$; $[P(Mo_2O_7)_3]_2[CrO_4] \cdot 1.5H_2O$; $[P(Mo_2O_7)_3]_2[CrO_4] \cdot 1.5H_2O$; and $[P(Mo_2O_7)_3]_2[CrO_4] \cdot 1.5H_2O$. W. R. A.</p>																			
A 58-514 METALLURGICAL LITERATURE CLASSIFICATION																			
FROM SYNTHESE										FROM ANALYSIS									
SYNTHESIS										ANALYSIS									

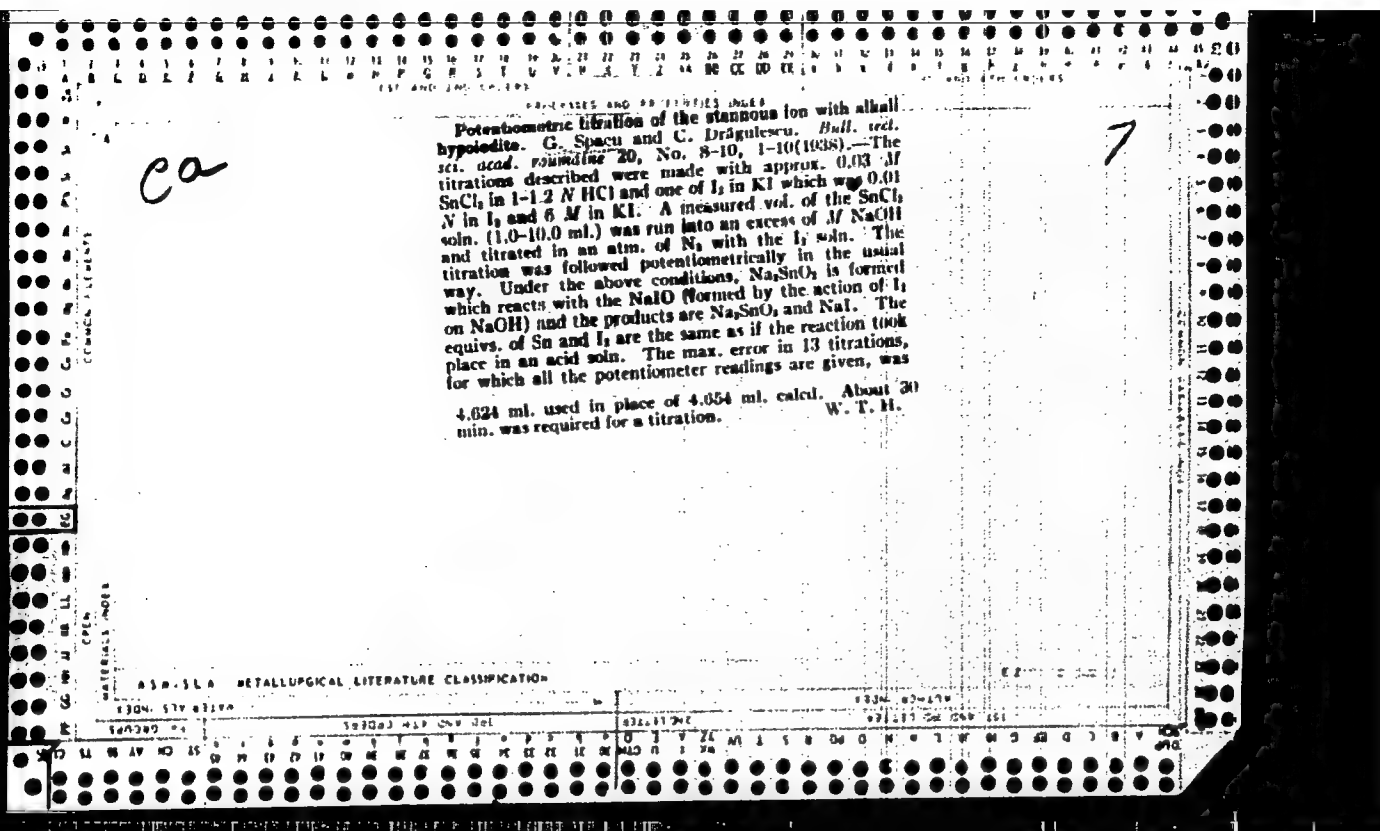
1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESSES AND PROPERTIES INDEX																			
BC										B-1-8									
<p>Preparation of silicon tetrachloride, using native (Bismuthian) starting materials, in view of its use as a fumigant agent. G. BRADY and P. VOZDAROV (Bul. Soc. Chim. Bulg., 65-76).—In the prep. of $SiCl_4$ according to $SiO_2 + 2Cl_2 + 2C = SiCl_4 + 2CO$, the most economic and convenient sources of SiO_2 are the silicates. An apparatus is described in which $SiCl_4$ is prepared by chlorination of (in particular) sandstone (97-4% SiO_2) in presence of wood charcoal. Its large-scale production is considered.</p> <p style="text-align: right;">W. R. A.</p>																			
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																			

00

7

Potentiometric titration of the stannous ion with potassium iodate. G. Spacu and C. Drăgulescu. *Bull. sect. sci. acad. roumaine* 20, No. 1-3, 1-10 (1983). Solns. of SnCl_2 in 1.21 N HCl were titrated successfully under N_2 with 0.01 M KIO_3 . About 25 mg. was present and the total vol. was about 40 ml. at the end of the titration. The values agreed within 0.05% of the truth which is satisfactory in detg. small quantities of Sn. The method was good in the presence of other elements likely to be found in alloys. W. F. H.

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION



New complex anionics belonging to the group of iron and cobalt dinitrosulfonates. G. HRAUS and C. G. MACANOVICH (Bul. Soc. Chim. Cluj, 1964, 10, 103-104, 10 refs.).

1939, 9, 197-206).—By addition of various amines to an aq. solution of $\text{Na}[(\text{NO})_2\text{Fe}_2\text{O}_4] \cdot 2\text{H}_2\text{O}$ at 0° the following compounds have been prepared: $\text{trans}-(\text{Co en}_2\text{Cl}_2)_2 \cdot 4\text{H}_2\text{O}$ (yellowish-green), $(\text{Co en}_2)_2\text{A} \cdot 2\text{H}_2\text{O}$ (brown), $(\text{Co NH}_2)_2\text{A} \cdot 4\text{H}_2\text{O}$ (brown), $(\text{Co en}_2)_2\text{B} \cdot 4\text{H}_2\text{O}$ (brown), and $(\text{Co en}_2)_2\text{B} \cdot 4\text{H}_2\text{O}$ (yellowish-brown), where $\text{A} = [(\text{NO})_2\text{Fe}_2\text{O}_4]$. The anion A is fairly stable in solution at 0°. By mixing aq. solutions of $\text{K}_2[\text{Co}(\text{NO})_2\text{Fe}_2\text{O}_4]$ and of various amines and pptg. with HNO_3 the following compounds were obtained: $\text{cis}-(\text{Co en}_2\text{Cl}_2)_2 \cdot 2\text{H}_2\text{O}$ (violet-brown), $(\text{Co en}_2)_2\text{B} \cdot \text{H}_2\text{O}$ (brown), $(\text{Co NH}_2)_2\text{B} \cdot 2\text{H}_2\text{O}$ (brown), $(\text{Co en}_2)_2\text{B} \cdot 2\text{H}_2\text{O}$ (brown), where $\text{B} = [\text{Co}(\text{Co}(\text{OH})_2\text{Fe}_2\text{O}_4)]$. Both the A and B compounds decompose slowly with evolution of NO on heating, but are stable at low temp. O. J. W.

O.J.W.

Ca

6

The action of pyridine and of ammonia on certain complex amines containing benzidine. G. Spacu and C. Gh. Macarovici. *Bul. Soc. Stiinta Cluj* 9, 281-283 (1960).

By utilization of benzene as the solvent it is possible to prep. pyridine (Py) and ammonia addn. products from complex Co, Zn and Cd benzidine (Bzd) chlorides, $\text{CoCl}_2 \cdot \text{Bzd} \cdot 2\text{Py}$ (II), $\text{ZnCl}_2 \cdot \text{Bzd} \cdot 2\text{Py}$ (III), $[\text{ZnBzd}(\text{NH}_3)_2]\text{Cl}_2$ (IV), $[\text{CdBzd}(\text{NH}_3)_2]\text{Cl}_2$ (V). The direct addn. of the dry (metal BzdCl₂) to pyridine results in a displacement of the Bzd by the pyridine. The direct addn. of ammonia to a metal BzdCl₂ forms a complex compd. with six mols. of NH_3 added; however, this loses four mols. of NH_3 readily and in the case of $\text{CoCl}_2 \cdot \text{Bzd} + 6\text{NH}_3$ the product decomposes, owing to oxidation. Addn. of NH_3 in alc. or stirring of the ammonia addn. product in alc. displaces the benzidine. The above compds. prove that Bzd possesses two coordination points.

R. F. Deese

ASACSLA METALLURGICAL LITERATURE CLASSIFICATION

62-11-200

62-11-200

1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
PROCESS AND PROPERTIES INDEX																																																			
<p><i>BC</i></p> <p><i>H-1</i></p> <p>New class of ammonium. Complex thioammonium. G. Seauv and A. Por. (Bul. Soc. Chim. (Tij), 1939, 9, 307-317).—By the action of excess of Na_2S solution on SnCl_4 and pptn. with KOH the compound $\text{Na}_2\text{SnS}_4 \cdot 10\text{H}_2\text{O}$ (I) is obtained. The gray-white crystals are stable in absence of acid vapours. Aq. solutions are stable in presence of excess of Na_2S, and the equilibrium $[\text{SnS}_4]^{4-} \rightleftharpoons [\text{SnS}_3]^{3-} + \text{S}^{2-}$ is set up. By the action of ammonium on solutions of (I) the following compounds have been prepared:</p> <p>$[\text{Ni}(\text{NH}_4)_2\text{SnS}_4] \cdot 15\text{H}_2\text{O}$; $[\text{Co}(\text{NH}_4)_2\text{SnS}_4] \cdot 15\text{H}_2\text{O}$; $[\text{Cr}(\text{NH}_4)_2\text{SnS}_4] \cdot 15\text{H}_2\text{O}$; $[\text{Cr}(\text{NH}_4)_2\text{Cl}][\text{SnS}_4] \cdot 15\text{H}_2\text{O}$; $[\text{Cr}(\text{NH}_4)_2\text{Cl}][\text{SnS}_4] \cdot 15\text{H}_2\text{O}$; $[\text{Cr}(\text{NH}_4)_2\text{SCN}][\text{SnS}_4] \cdot 15\text{H}_2\text{O}$; $[\text{Cr}(\text{NH}_4)_2\text{SCN}][\text{SnS}_4] \cdot 15\text{H}_2\text{O}$. O. J. W.</p>																																																			
<p>ASB-51A METALLURGICAL LITERATURE CLASSIFICATION</p>																																																			

AC

A-1

Indirect volumetric determination of arsenic. G. SPACU and M. VANCEA (Bul. Soc. Stiinta Cluj, 1939, 9, 318-320).—The AsO_4^{3-} is precipitated with $AgNO_3$ solution in presence of NH_4NO_3 and NH_4OAc , and after filtration the excess of Ag is determined by Volhard's method. The method is rapid and accurate.

O. J. W.

ASM-51A METALLURGICAL LITERATURE CLASSIFICATION

BC

B-1

Molecular volume of water in complex compounds. P. G. Strav (Bull. Acad. Sci. Roumania, 1969, 22, 35-37).—Determinations of the mol. vol. of $\text{cis}[\text{Co}(\text{en})_2\text{Cl}_2]\text{Cl}$, $\text{cis}[\text{Co}(\text{en})_2\text{CH}(\text{H}_2\text{O})\text{Cl}_2]$, and $\text{cis}[\text{Co}(\text{en})_2(\text{H}_2\text{O})_2]\text{Cl}_2$ give vals. 14-15 and 14-20 for the mol. vol. of the first and second H_2O , respectively, calc. from vals. for Co , Cl , and en at 0° K. $\text{trans}[\text{Co}(\text{en})_2\text{Cl}_2]\text{Cl}$ gives too low a val. The mol. vol. of the H_2O in the interior of the complexes is equal to that at 0° K. L. J. J.

AS 10.51.4 METALLURGICAL LITERATURE CLASSIFICATION

AC 71

PROPERTIES AND PROPERTIES INDEX

NEW class of stannates. Complex thio-stannates. G. Brauer and A. For (Zell. Anod. Met. Roumaine, 1939, 21, 52-61). The prep. of the following compounds is described: $\text{Na}_2\text{SnS}_4 \cdot 10\text{H}_2\text{O}$; $[\text{Ni}(\text{CN})_4]\text{SnS}_4$; $[\text{Co}(\text{CN})_4]\text{SnS}_4 \cdot 10\text{H}_2\text{O}$; $[\text{Cr}(\text{CN})_4]\text{SnS}_4 \cdot 2\text{H}_2\text{O}$; $[\text{Cr}(\text{NH}_3)_4]\text{SnS}_4$; $[\text{Cr}(\text{NH}_3)_4]\text{SnS}_4 \cdot 2\text{H}_2\text{O}$; $[\text{Cr}(\text{NH}_3)_4]\text{SnS}_4 \cdot 2\text{H}_2\text{O}$. Aq. solutions of these stannates contain both Sn^{4+} and Sn^{2+} ions, their relative concn. being governed by the [H⁺]. D. V. R.

ASB SLA METALLURGICAL LITERATURE CLASSIFICATION

LIST AND END ORDERS																										PRINCIPLES AND PROPERTIES INDEX																										LIST AND END ORDERS																									
<p><i>BC</i> <i>Q-1</i></p> <p>New class of complexes. Complex submetal- monites. Constitution of submetal- monites. M. VANDER, and J. DEVAL. (Bull. Acad. Sci. Roumanie, 1969, 21, 65-72). Five complex submetal- monites have been prepared from Kricheldorf's salt, Na₂SbCl₆·6H₂O: [OsCl₃(H₂O)₃][SbCl₆], 1.6H₂O; [OsCl₃(H₂O)₃][SbCl₆], 2H₂O; [OsCl₃(H₂O)₃][SbCl₆], 3H₂O; [OsCl₃(H₂O)₃][SbCl₆], 4H₂O; [OsCl₃(H₂O)₃][SbCl₆], 5H₂O. The existence of the submetalmonite ion is confirmed; the structure [SbCl₆]³⁻ is suggested. D. F. R.</p>																																																																													
<p>ASB, SLA METALLURGICAL LITERATURE CLASSIFICATION</p> <p>ESOMI SYMBOLISM</p> <p>SYMBOLS: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100</p>																																																																													

PRECEDENCE AND PROPERTY INDEX

A-1

BC

Potentiometric titration of the antimony ion by means of potassium iodide and sodium thiosulfate. (C. GRACE and C. DUBOIS) (Bull. Acad. Sci. Roumanie, 1959, 21, 85-105). The I liberated by the reaction $Sb^{3+} + 2I^- \rightleftharpoons Sb^{5+} + 2I^-$ is titrated with 0.1N-Na₂S₂O₃ at room temp. and the end-point determined potentiometrically (cf. S. Iancu, 1959, 22, 545). The data recorded for the effects of varying the [HCl] and the [KI] show that with solutions containing ~0.07 g. of Sb in a final vol. of 100 c.c. the [HCl] must be <1.2N and only the stoichiometric quantity of KI should be present; for solutions containing 0.1 g. Sb in 20-50 c.c. initial vol., the initial [HCl] must be 4N and a large quantity of KI, 2-3 times the stoichiometric amount, must be present to prevent loss of I.

L. S. T.

A.S.T.A. METALLURGICAL LITERATURE CLASSIFICATION

[illegible]


BC

2-1

New class of complexes. Complex thionolysates and thionogluconates. G. HAZU and A. FUR (Bull. Acad. Med. Kōmei, 1960, 28, 198-199).
The following complex salts have been obtained by double decomp.: $[\text{MoS}_4][\text{Ni en}]_2$; $[\text{MoS}_4][\text{Zn en}]_2$; $[\text{MoS}_4](\text{Cr en})_2$; $[\text{MoS}_4](\text{Co en})_2$; $[\text{MoS}_4](\text{Cr uron})_2 \cdot 4\text{H}_2\text{O}$; $[\text{MoS}_4](\text{Cr antipyrine})_2$; $[\text{WS}_4](\text{Ni en})_2$; $[\text{WS}_4](\text{Zn en})_2$; $[\text{WS}_4](\text{Cr en})_2$; $[\text{WS}_4](\text{Co en})_2$; $[\text{WS}_4](\text{Cr uron})_2 \cdot 4\text{H}_2\text{O}$; $[\text{WS}_4](\text{Cr antipyrine})_2$. F. J. G.

F. J. 42

ASB-11A METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND GROUPS										3RD AND 4TH GROUPS									
PROCESSES AND PROPERTIES INDEX																			
<p>  A-1 </p> <p> Potentiometric titration of the arsenic ion with potassium iodide and sodium thiosulfate. G. BRACY and C. DRACULANU (Bull. Acad. Sci. Roumania, 1939, 28, 1-13).—The solution (70–100 c.c.) containing 0.075 g. of As^{3+} and 30–40 vol.-% of conc. HCl is treated with 3–5 times the wt. of KI required by $H_3AsO_3 + 3I^- + 2H^+ \rightleftharpoons H_3AsO_4 + I_2 + H_2O$, and after 5 min. the I_2 liberated is titrated potentiometrically with 0.1M $Na_2S_2O_3$ in an atm. of N_2. Any As^{III} present may be determined iodometrically in presence of $NaHCO_3$ before titration of the total As by the above method. The error is >0.3%. A. J. E. W. </p>																			
<div style="display: flex; justify-content: space-between;"> 430.354 METALLURGICAL LITERATURE CLASSIFICATION 6-2 </div>																			
FROM SYNDICATE										FROM LIBRARY									
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6

Contribution to the constitution of heteropolysacids. II.
A new class of aminines. The phosphododecatungstate
complexes. G. Spacu and V. Nicolae. Bull. sci.
ser. acad. roumaine 22: 130-41 (1939). Detailed descrip-
tion of method of prepn. and analysis of $[\text{Co}(\text{NH}_3)_6(\text{NO})] \cdot$
 $\text{H}_2(\text{P}_2\text{W}_{12}\text{O}_{42}) \cdot 18\text{H}_2\text{O}$, $[\text{Co}(\text{NH}_3)_6(\text{NO})] \cdot \text{H}_2(\text{P}_2\text{W}_{12}\text{O}_{42}) \cdot$
 $7\text{H}_2\text{O}$, $[\text{Cr}(\text{NH}_3)_6(\text{NO})] \cdot \text{H}_2(\text{P}_2\text{W}_{12}\text{O}_{42}) \cdot 17\text{H}_2\text{O}$, $[\text{Co}(\text{NH}_3)_6(\text{NO})] \cdot$
 $\text{H}_2(\text{P}_2\text{W}_{12}\text{O}_{42}) \cdot 11\text{H}_2\text{O}$, $[\text{Co}(\text{NH}_3)_6(\text{NO})] \cdot \text{H}_2(\text{P}_2\text{W}_{12}\text{O}_{42}) \cdot 14\text{H}_2\text{O}$,
 $15\text{H}_2\text{O}$ (trans), $[\text{Cr}(\text{NH}_3)_6(\text{NO})] \cdot \text{H}_2(\text{P}_2\text{W}_{12}\text{O}_{42}) \cdot 14\text{H}_2\text{O}$,
 $[\text{Co}(\text{NH}_3)_6(\text{NO})] \cdot 16\text{H}_2\text{O}$, $[\text{Cr}(\text{NH}_3)_6(\text{NO})] \cdot \text{H}_2(\text{P}_2\text{W}_{12}\text{O}_{42}) \cdot$
 $19\text{H}_2\text{O}$, $[\text{Cr}(\text{NH}_3)_6(\text{NO})] \cdot \text{H}_2(\text{P}_2\text{W}_{12}\text{O}_{42}) \cdot 19\text{H}_2\text{O}$.
A. A. Vernon

ASAC-SLA METALLURGICAL LITERATURE CLASSIFICATION

CL

6

Two new compounds—silver thallium phosphate and silver thallium arsenate. G. Spach and P. Spach. *Bull. soc. sci. acad. roumaine* 22, 117-118 (1939). —To a soln. of 0.45 g. $\text{NaH}_2\text{PO}_4 \cdot 12\text{H}_2\text{O}$ in 40 cc. H_2O and 0.6 g. TlOAc in 20 cc. H_2O was added with agitation a soln. of 0.3 g. AgNO_3 in 20 cc. H_2O . The ppt. washed with alc. and ether had the compn. Ag_2TlPO_4 . Similarly to a soln. of 0.6 g. $\text{NaH}_2\text{AsO}_4 \cdot 7\text{H}_2\text{O}$ in 40 cc. H_2O and 0.8 g. TlOAc in 20 cc. H_2O was added 0.4 g. AgNO_3 in 20 cc. H_2O . The ppt. proved to be $\text{Ag}_2\text{TlAsO}_4$. It is important to have a ratio of $\text{Tl}:\text{Ag}$ of slightly more than 1:2. Under the proper conditions the pptn. is quant. J. C. Le Clercq

450-55A METALLURGICAL LITERATURE CLASSIFICATION

Class of aminines with 8-hydroxyquinoline and 5,7-dibromo-8-hydroxyquinoline. G. Spacu and C. Gh. Marcoveici. *Bull. sect. sci. acad. rei. pub. Roum.* 22, 150 (1939).

The following complex compds. of 8-hydroxyquinoline (I) and 5,7-dibromo-8-hydroxyquinoline (II) were prepd. in which I and II were anions: $[Cr(NH_3)_6](OC_6H_4N)_n$, $[Co(NH_3)_6](OC_6H_4N)_n$, $[Ni(NH_3)_6](OC_6H_4N)_n$, $[Cu(NH_3)_6](OC_6H_4N)_n$, $[Zn(NH_3)_6](OC_6H_4N)_n$, $[Mg(NH_3)_6](OC_6H_4N)_n$, $[Ca(NH_3)_6](OC_6H_4N)_n$, $[Sr(NH_3)_6](OC_6H_4N)_n$, $[Ba(NH_3)_6](OC_6H_4N)_n$, $[Th(NH_3)_6](OC_6H_4Br)_n$, $[U(NH_3)_6](OC_6H_4Br)_n$, $[Ce(NH_3)_6](OC_6H_4Br)_n$, $[La(NH_3)_6](OC_6H_4Br)_n$, $[Pr(NH_3)_6](OC_6H_4Br)_n$, $[Nd(NH_3)_6](OC_6H_4Br)_n$, $[Sm(NH_3)_6](OC_6H_4Br)_n$, $[Eu(NH_3)_6](OC_6H_4Br)_n$, $[Gd(NH_3)_6](OC_6H_4Br)_n$, $[Tb(NH_3)_6](OC_6H_4Br)_n$, $[Dy(NH_3)_6](OC_6H_4Br)_n$, $[Ho(NH_3)_6](OC_6H_4Br)_n$, $[Er(NH_3)_6](OC_6H_4Br)_n$, $[Y(NH_3)_6](OC_6H_4Br)_n$, $[Lu(NH_3)_6](OC_6H_4Br)_n$. Similar compds. of Cd, Zn and Cu could not be prepd. inasmuch as I and II became part of the cation. The general method for prep. the above compds. consists of adding a dil. soln. of the K salt of I or II to a dil. soln. of the corresponding chloride or nitrate. J. C. Lo Cicero

ASME-STEEL METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS
PROCESSED AND PROPERTIES INDEX

AC

Potentiometric study of the formation of a double thallium silver arsenate. G. BRAGU and C. DUMAS (Bull. Acad. Sci. Roumaine, 1960, 22, 173-178).—If eq. alcoholic AgNO_3 containing an excess of TlOAc or Tl_2O_3 and buffered with NaOAc , a rise in potential is observed when 1 mol. of arsenate has been added per 2 atoms of Ag, corresponding with the production of $\text{Ag}_2\text{TlAsO}_6$ (I) (cf. A., 1940, 1, 135). Optimum results are obtained with a high $[\text{H}_2\text{O}]$. when (I) is less sol. The rise in potential is also more marked when titration is carried out in conc. solution and in the presence of a large excess of Tl^+ . The method is suitable for the determination of AsO_4^{3-} . J. W. R.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

1000 1700 1800 1900 2000 2100 2200 2300 2400 2500 2600 2700 2800 2900 3000 3100 3200 3300 3400 3500 3600 3700 3800 3900 4000 4100 4200 4300 4400 4500 4600 4700 4800 4900 5000 5100 5200 5300 5400 5500 5600 5700 5800 5900 6000 6100 6200 6300 6400 6500 6600 6700 6800 6900 7000 7100 7200 7300 7400 7500 7600 7700 7800 7900 8000 8100 8200 8300 8400 8500 8600 8700 8800 8900 9000 9100 9200 9300 9400 9500 9600 9700 9800 9900

1ST AND 2ND GRD[91]																										1ST AND 2ND GRD[91]																									
PROCESSING AND PROPERTIES INDEX																										PROCESSING AND PROPERTIES INDEX																									
<p>CP</p> <p>Constitution of heteropolyacids. III. The phospho- dodecamolybdates, phosphododecatungstates and allied dodecatungstates of some organic amines. (I. Spassky and V. Nicolaeescu. Bull. reil. sci. chim. Roumaine 22, 337-49(1940) (in French); cf. C. A. 34, 1932;—Direc- tions for the prepn. of $(C_6H_5N)_3H_2[P(MoO_4)_6]$; $(C_6H_5N)_3H_2[P(MoO_4)_6] \cdot 2H_2O$; $(H_2NC_6H_4C_6H_4NH_2)_2H_2[P(MoO_4)_6] \cdot 2H_2O$; $(C_6H_5N)_3H_2[P(WO_4)_6]$; $(C_6H_5N)_3H_2[P(WO_4)_6] \cdot 2H_2O$; $(H_2NC_6H_4C_6H_4NH_2)_2H_2[P(WO_4)_6] \cdot 2H_2O$; $(C_6H_5N)_3H_2[Si(WO_4)_6] \cdot 2H_2O$. A. A. Kerman</p>																										<p>6</p>																									
AS-5LA METALLURGICAL LITERATURE CLASSIFICATION																										AS-5LA METALLURGICAL LITERATURE CLASSIFICATION																									
1ST AND 2ND GRD[91]																										1ST AND 2ND GRD[91]																									

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

100 AND 4TH ORDERS

6

q CuCl₂ in 75% alc. with an excess of an alc. soln.

HIGHER AMMONIATES OF COMPLEX SALTS. G. Spach and P. Voichescu. Bull. sect. sci. acad. roumaine 25, 416-20(1943) (in German); Chem. Zentr. 1944, I, 745; cf. G.A. 36, 527. The effect of liquid NH₃ on (Cu bn Cl₂) (I) (bn = e-bianisidine) was studied. I was obtained as a black ppt. by mixing a soln. of bn. The powd. compd. was washed repeatedly with abs. alc. and ether; it was dried at 100° and then treated with 14 moles of liquid NH₃ per mole at -76° in a tensimeter. The first isotherm at -76° showed the formation of a 10-6-ammoniate with a vapor tension of 15mm. and as the final phase as 8-ammoniate of similar appearance. The -44° isotherm corresponds to the formation of a 6-ammoniate. At 1° this decomp. into a 4-ammoniate, which is stable to 56° and at this temp. decomp. into a 2-ammoniate stable to 78°. Between 76 and 100° a 1-ammoniate exists. The max. no. of NH₃ mole. added increases with increasing at. vol. of the metal; this agrees with results previously reported for bn complexes. The isotherms of the (Cu bn Cl₂)-NH₃ system are similar to those of the (Zn bn Cl₂)-NH₃ system, but the vapor tensions of the Cu system are larger and the compds. correspondingly less stable. This difference is more pronounced the smaller the no. of NH₃ mole. in the compd. The stability of the

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comps. increases with increasing at. vol. of the central metal atom. The heats of formation of the ammoniates of I in kg.-cal. are: deca 8.14, octa 8.57-8.81, hexa 10.73, tetra 12.44-12.75, di 14.62, and mono 16.19. Up to a coordination no. of 6 the NH_3 mole. can be bound directly to the central atom.

T. N. Dunkelberger

COMMON SUPPLEMENT

7

CA

Potentiometric titration with potassium iodate. II. The potentiometric determination of thorium. G. Spacu and P. Spacu (Univ. Tech. Bucharest, Bucharest, Rumania). *Bull. Inst. Sci. Acad. Romania* 26, 204-210 (1944) (in German); *Chem. Zentr.* 1944, II, 1237-G; cf. C.A. 38, 2645¹.—A 20-cc. sample of the $\text{Th}(\text{NO}_3)_4$ soln. (about 0.01 M) is placed in a 100-cc. volumetric flask and treated with a measured amt. of 0.02 M KIO_3 . The latter must be sufficient to be in excess. After the soln. has settled the flask is filled to the mark with the KIO_3 soln. After filtering through a dry filter, 10 cc. of the filtrate is diltd. with 100 cc. of water, 1-2 g. KI and 5 cc. of 2 N H_2SO_4 are added, and the excess KIO_3 is titrated potentiometrically with 0.1 M $\text{Na}_2\text{S}_2\text{O}_3$ (cf. C.A. 31, 972²). Check analyses are reported in tables. The soly. of the $\text{Th}(\text{IO}_3)_4$ in 0.01 M KIO_3 was detd. and is reported as 7.83×10^{-6} . M. G. Moore

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6

The study of the structure of potassium antimonate. A new class of amines. The hexahydroxyantimony-
amines. G. Spacu and C. Niculescu-Schreier (Univ. Bucharest, Romania). *Acad. Rep. Populare Romane, Bul. Stint. A*, 1, 41 8(1948).--Six new hexahydroxy-antimonyamines were prepd. to prove the chem. structure of $K[Sb(OH)_6]$ by replacing the K^+ with Co, Cr, and Cu amines of known constitution: $[Sb(OH)_6][Co(NH_3)_6] \cdot 3H_2O$, $[Sb(OH)_6][Co(NH_3)_5Cl] \cdot H_2O$, $[Sb(OH)_6][Co(NH_3)_4(C_2O_4)] \cdot H_2O$, $[Sb(OH)_6][Cr(NH_3)_6] \cdot 2H_2O$, $[Sb(OH)_6][Co(NH_3)_5CO_2] \cdot 1.5H_2O$, and $[Sb(OH)_6][Cu(NH_3)_4] \cdot 2.5H_2O$. All are slightly sol. in H_2O at room temp.; in hot H_2O they decomp. with pptn. of $Sb_2O_3 \cdot 7H_2O$; sol. in acids with decomp. Gerhard Auliger

1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESSES AND PROPERTIES INDEX																			
<p>CA</p> <p>Potentiometric titrations with potassium iodate. II. Determination of thorium. G. Spacu and P. Spacu (Bukarest, Univ.). Z. anal. Chem. 128, 229-8 (1948); cf. C.A. 28, 2644. The results of direct titration proved unsatisfactory but good results could be obtained by pptg. Th^{4+} as $\text{Th}(\text{IO}_3)_4$, filtering, and detg. the excess IO_3^- in an aliquot part of the filtrate, by adding KI and H_2SO_4 and titrating the liberated I_2 with $\text{Na}_2\text{S}_2\text{O}_3$. The end points were detd. potentiometrically and the results were satisfactory. III. Potentiometric determination of lanthanum. Ibid. 128, 229-31 (1948).—La, like Th, can be detd. by adding a known vol. of KIO_3 and detg. the excess reagent. To obtain complete pptn. of the La as iodate, it is necessary that the soln. should contain about 35% EtOH. Of 2 results reported, one is excellent and the other is about 0.5% too high.</p> <p>W. T. Hall</p>																			
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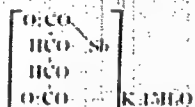
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<p>Potentiometric titrations with potassium iodate. VII. Determination of L-ascorbic acid. G. Spacu and P. Spacu (Bukarest, Univ.). <i>Z. anal. Chem.</i> 128, 233-5 (1948); cf. <i>C.A.</i> 42, 5705i.—When ascorbic acid is treated in acid soln. with KIO_3 and KI, it is oxidized to dehydroascorbic acid by the I formed. One mole of the ascorbic acid reacts with one of I. The excess I can be titrated potentiometrically with $Na_2S_2O_3$ soln. W. T. Hall</p>																																																			
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CA

6

Complex antimony tartrates III.—G. Spacu and Des-
spina Pirtea (Univ. Bucharest, Rumania). *Ind. Rep.*
Populare Române, Bul. Stiint. A, 1, 143-51 (1919); cf. *Bull.*
Soc. chim. Roumaine 27, 139 (1911). A series of new com-
plex Sb tartrates was prepd. in order to prove the structure
of $(C_4O_4H_4Sb)_2 \cdot 10H_2O$ (1). (1) $(C_4O_4H_4Sb)_2[Co(NH_4)_4]$ -
 NO_3 , H_2O -sol., orange crystals, rather stable. (2) $(C_4O_4H_4Sb)_2[Co(NH_4)_4](ClO_4) \cdot 3H_2O$, similar to (1). (3) $(C_4O_4H_4Sb)_2[Co(NH_4)_4](H_2O) \cdot 3H_2O$, similar to (1). (4) $(C_4O_4H_4Sb)_2[Co(NH_4)_4](NO_3) \cdot 4H_2O$, decomp. in air, H_2O .

orange crystals. (5) $(C_4O_4H_4Sb)_2[Co(NH_4)_4](Cl_5H_4O)$, sol.
in H_2O , yellow crystals. (6) $(C_4O_4H_4Sb)_2[Co(NH_4)_4](H_2O)$
 H_2O , bright-yellow crystals. (7) $(C_4O_4H_4Sb)_2[Co(NH_4)_4]$
 $11H_2O$, (8) $(C_4O_4H_4Sb)_2[Co(NH_4)_4]NO_3$. Examples of prepn.:
(1) 0.5 g. KNO_3 in 10 ml. H_2O + 1 g. $(C_4O_4H_4Sb)_2[Co-$
 $(NH_4)_4]Cl_5H_4O$ at 40° was stirred for 30 min., filtered, and
the product washed with cold H_2O , and dried on a porous
plate in a desiccator. (2) 0.1 g. $[Co(NH_4)_4]Cl_3$ in 6 ml.
 H_2O and 0.48 g. in 6 ml. H_2O was stirred well, and the
product washed three times with cold H_2O , and dried for 24 hrs.
on a porous plate. IV. New contributions to the study
of the structure of tartar emetic. *Anal. Ind. Rep. Popu-*
lare Române, Soc. Stiint. Mat., Fiz. Chim., Ser. A, 2,
Mosc. No. 7, 26 pp. (1919) (French summary). Instead of
the formula given by Rohlen and Herzl (1, 2, 25, 1852)
for tartar emetic, in which a H_2O mol. is supposed to be
attached to the Sb by a secondary valence, S. and P. suggest



As evidence that the H_2O is not bound to Sb by partial
valence, a benzidinium salt, $[C_6H_5Sb] \cdot H_2O \cdot 7H_2O$ was
prepd.; it loses $7H_2O$ under vacuum at room temp. in the
presence of P_2O_5 . When treated with H_2Cl it yields
 $[C_6H_5Sb] \cdot Ba_4H_4O$ with $[Co(NH_4)_4]Cl_3$ (ratio 1:1)
 $[C_6H_5Sb] \cdot [Co(NH_4)_4]Cl_5H_4O$ is formed with $[Co-$
 $(NH_4)_4](NO_3)$, $[C_6H_5Sb] \cdot [Co(NH_4)_4]NO_3$ is formed. For-
mation of the anhyd. nitrate proves the absence of water
in the antimonytartrate residue. Gerhard Auller

CA

6e

A new class of ammonium. The metallic phthalazine thiocyanates. G. Spacu and P. Spacu (Univ. Bucharest, Rumania). *Analele Acad. Rep. Populare Romane, Ser. Stiinte Mat., Fiz. Chim., Sec. A, 2, Mem. 12, 20 pp. (1969)* (French summary).—By treating aq. solns. of their salts with phthalazine (Phalz) and then with NH_4SCN , Fe, Cu, Cd, Zn, and Ni form $\text{MPhalz}(\text{SCN})_3$, Pb forms $\text{PbPhalz}(\text{SCN})_3$, Mn forms $\text{MnPhalz}(\text{OH})(\text{SCN})_2$, $\text{MnPhalz}(\text{SCN})_3$, and Co forms $\text{CoPhalz}(\text{OH})(\text{SCN})_2$, $\text{CoPhalz}(\text{SCN})_3$. The Mn and Ni salts have 3 mols. of H_2O ; the others are anhydrous. The Fe complex is sol. in some org. solvents, especially in chloroform (blood-red coloration used to identify ferrous ions); all the others are either insol. or decomp. in org. solvents. All decomp. in mineral acids and bases. An example of the method of prepn. is: treat 0.7 g. $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$ in 10 ml. H_2O with 0.7 g. phthalazine in 5 ml. H_2O and 0.4 g. NH_4SCN in 10 ml. H_2O , wash the

white ppt. with a small amt. H_2O , and dry on a porous plate in vacuo at room temp. Gerhard Aufberger

Monohydrate antimony salts. O. Spacu and Sanda Lupan (Univ. Bucharest, Rumania). *Mol. Acad. Rep. Popular Republic, Sect. Sci. Nat., Fa. Chem., Ser. A, 2, Mem. 22, 20 pp. (1949) (French summary).*—To prove the structure of the pyrosulfamates, $M(SO_3H)_2$, $[Sb(OH)_4]H_2Bad(HCl)$ (I), $[Sb(OH)_4]H_2Bad(HCl)_2Bad(HCl)_2Bad(HCl)_2$ (II), $[Sb(OH)_4]H_2Bad(HCl)_2Bad(HCl)_2$ (III), $[Sb(OH)_4]H_2Bad(HCl)_2Bad(HCl)_2$ (IV), $[Sb(OH)_4]H_2Bad(HCl)_2Bad(HCl)_2$ (V), $[Sb(OH)_4]H_2Bad(HCl)_2Bad(HCl)_2$ (VI), $[Sb(OH)_4]H_2Bad(HCl)_2Bad(HCl)_2$ (VII), and $[Sb(OH)_4]H_2Bad(HCl)_2Bad(HCl)_2$ (VIII) were prepd. by treating the K pyrosulfamate with the chlorides and sulfates of benzidine and tolidine (I–V) and by exposing an eq. soln. of the K salt to the action of some metalamines (VI–VIII). They all dissolve in dil. HCl with decompos. except III and V, which are dissolved only in the presence of tartaric acid. Hydrolyzes in H_2O at room temp. liberating the monohydroxy-antimoninic acid, which loses a half H_2O on being dried. When exposed to the dehydrating action of $CaCl_2$ or H_2SO_4 all compds. lose 1.5–3 mols. H_2O . G. Ausloos

Hexahydroxy stannates. G. Spacu and Sanda Lăpuș (Univ. Bucharest, Roumania). *Ann. Acad. Sci. Univ. Cluj, Ser. A, 2*, Mem. 24, 10 pp. (1949) (French summary).—Chlorides and sulfates of benzidine and tolidine and complex metalamines are added to K stannate to prep. 8 new complex salts: (1) $H_6[Sn(OH)_6] \cdot (tol. HCl)_4 \cdot 2H_2O$, (2) $H_6[Sn(OH)_6] \cdot tol. HCl$, (3) $H_6[Sn(OH)_6] \cdot (tol. HCl)_4 \cdot 2H_2O$, (4) $H_6[Sn(OH)_6] \cdot tol. HCl$, (5) $[Sn(OH)_6] \cdot [Cu(NH_3)_4] \cdot 4H_2O$, (6) $[Sn(OH)_6] \cdot [Co(NH_3)_4] \cdot 4H_2O$, (7) $[Sn(OH)_6] \cdot [Cr(NH_3)_3] \cdot 3H_2O$, (8) $[Sn(OH)_6] \cdot [Cr(NH_3)_3] \cdot 3H_2O$. They are all cryst. compds., sol. in warm dil. HCl, unstable in hot H_2O . Examples of prepn: (1) 0.75 g. $K_2Sn(OH)_6$ and 1.28 benzidine.HCl are mixed well in a mortar while 25 cc. H_2O is added stepwise, filtered after 10 min. without washing, dried on porous plate at room temp., analyzed after 24 hrs. (Sn by the Löwenthal method, benzidine-N by Kjeldahl). (5) to 1 g. K stannate dissolved in 6 cc. water + 4 cc. concd. NH_4OH 1.5 g. $Cu(NH_3)_4SO_4$ is added, mixed, and cooled on ice. After 20 min. the blue crystals are filtered, and washed twice with EtOH sat'd with NH_3 , kept over solid NaOH in a desiccator in NH_3 atm. for 2 hrs., then analyzed. The formula for K stannate is shown to be $K_2[Sn(OH)_6]$, as suggested by Belucci and Paravano (1935).

Gerhard Aufberger

CA

Rapid method for the separation of copper from cadmium and their gravimetric determination. G. Spacu and Constantin Cristea-Gheorghe (Univ. Bucharest, Romania). Acad. Rep. Populare Romane, Bul. Stiint., Ser.: Mat., Fiz., Chim., 2, 487-93 (1950) (French summary).—Treat the soln. contg. Cu and Cd with a slight excess of H_2SO_4 and NH_4SCN . The first greenish ppt. of CuSCN turns white. Filter through a filter crucible A_2 . Wash the ppt. with H_2O , EtOH , and finally with abs. Et_2O , dry for 10 min. in vacuo and weigh. Boil the filtrate until all SO_2 is removed and the soln. is only slightly acidic. Cool the 50-100 ml. of soln. contg. only Cd and treat with 0.5-1 g. NH_4SCN and add pyridine dropwise until a ppt. forms. Heat until the ppt. dissolves and add one more ml. of pyridine. Stir, cool, and filter through a filter crucible A_2 and wash the ppt. with a soln. contg. 3 g. NH_4SCN + 5 ml. pyridine in 1000 ml. H_2O , then 4-5 times with 1 ml. of a sol. (contg. 25 ml. 95% EtOH , 73 ml. H_2O , 2 ml. pyridine, 0.1 g. NH_4SCN), and then twice with 1 ml. of a 10% sol. of pyridine in abs. EtOH ; (the ppt., CdPy(SCN)_2 is slightly sol. in abs. EtOH) and finally with a soln. contg. 2 drops of pyridine in 10 ml. abs. ether. Dry and weigh. Gerhard Aufberger

C-4

7

Rapid method for separating and determining copper and zinc. G. Spacu and Constanta Cristen-Cheorghiu (Univ. Bucharest, Rumania). *Acad. Rep. Populare Romane, Bul. Stiint.*, Ser.: *Mat., Fiz., Chim.*, 2, 583 (1970) (French summary).—Treat the aq. soln. contg. Cu and Zn with a slight excess of H_2SO_4 and NH_4SCN , adding the latter dropwise under continuous stirring. Filter off the white ppt. of $CuSCN$, wash with H_2O , $EtOH$, and finally with abs. $EtOH$, dry for 10 min. in a vacuum desiccator and weigh. Boil the filtrate until all SO_4 is removed, cool, and treat with 0.5–1 g. NH_4SCN and then with enough pyridine to neutralize it and leave 1 ml. in excess. The $[ZnPy_2(SCN)_2]$ the ppt. is finely cryst. Filter after 15 min.; wash with a soln. contg. 3 g. NH_4SCN + 5 ml. pyridine in 100 ml.; then with a soln. contg. 15 ml. 95% $EtOH$ + 85.5 ml. H_2O ; + 1.5 ml. pyridine + 0.1 g. NH_4SCN , then with 1–2 ml. abs. $EtOH$ (contg. 10% pyridine) and finally 5–6 times with ether (contg. 2 drops of pyridine in 15 ml. $EtOH$). Dry the ppt. for 15 min. in a vacuum desiccator at room temp. and weigh. G. A.

7

CA

A new, rapid and precise method for the quantitative separation of copper from bismuth or from bismuth, antimony, and tin. G. Spacu and Despina Pirtea (Univ. Bucharest, Rumania). *Acad. Rep. Populare Romane. Bul. Stiint., Ser.: Mat., Fiz., Chim.* 2, 811-18 (1950) (French summary).—To the soln. contg. Cu and Sb ions add 0.75 g. tartaric acid for each 0.1-0.3 g. Sb. Dil. to 70-80 ml. add 2.5-3 ml. pyridine and 0.5 g. solid NH_4SCN gradually while stirring. A green ppt. of $[\text{CuPy}_2(\text{SCN})_2]$ is formed immediately. When the ppt. has settled, filter through a filter crucible As. Wash the ppt. with a soln. of 0.75 g. NH_4SCN + 0.75 g. tartaric acid + 2.5 ml. pyridine + 25 ml. H_2O and then 7-8 times with 2-3 ml. of a soln. contg. 0.13 g. NH_4SCN + 2 ml. pyridine + 48 ml. H_2O in 200 ml. 90% EtOH. Finally wash with abs. EtOH and Et₂O contg. a small amt. of pyridine and dry for 20 min. in vacuo at room temp. If Bi, Sb, and Sn are present in the Cu alloy or mineral, treat with hot concd. HCl, introduce a few ml. H_2O_2 dropwise, heat until all metals are dissolved and the excess H_2O_2 removed. Add 0.75 g. tartaric acid, dilute to 75 ml., and add 5 ml. pyridine and 0.5 g. NH_4SCN with stirring. Wash as described above. Gerhard Aufleger

CM

A new rapid and precise method for the determination of aluminum. G. Spacu and Th. J. Peter (Univ. Bucharest, Rumunian). *Anal. Rep. Populare Romane, Pol. Sci. Ser.: Mat., Phys., Chem.* 2, 619-24 (1969) (French summary). Treat a soln. contg. 0.005-0.05 g. Al with an excess (2-4 ml.) of a 10-15% soln. of Na mercaptobenzenethiolate, $\text{C}_6\text{H}_5\text{NS}_2\text{Na}$. After stirring, filter through a porcelain filter crucible A₁ or A₂ or Jones crucible 10. Transfer all the ppt. to the crucible with a soln. of 0.1 g. reagent in 100 ml. H_2O . Wash the ppt. 3-4 times with 2-3 ml. portions of H_2O and dry at 105-110° for 20-45 min., then weigh. Prepn. of the reagent: Treat mercaptobenzenethiolate with a N soln. of NaOH . Use a little less than the stoichiometric amt. of NaOH and remove the excess mercaptobenzenethiolate by filtering. The obtained soln. of $\text{C}_6\text{H}_5\text{NS}_2\text{Na}$ has a pH of 8. Gerhard Aufberger

OP 2

New method for the gravimetric determination of thorium.
G. Spacu and Th. I. Pitea (Univ. Bucharest, Rumania).
*Acad. Rep. Populare Romane, Bul. Stiinf., Ser.: Mat., Fiz.,
Chim.* 2, 660-76 (1950) (French summary).—To 5-20 ml.
of a soln. contg. 0.02-0.2 g. $\text{Th}(\text{NO}_3)_3$, add 2-10 ml. of the
Na salt of mercaptobenzoethanol soln. while stirring.
A white ppt. is formed instantaneously. After stirring for 5
min. filter with a filter crucible A, or Jena 1G, wash with 50-
100 ml. of a soln. contg. 1-1.5 ml. reagent in 100 ml. H_2O ,
then 4-5 times with 2 ml. H_2O , dry at 105-110° for 30-45
min., and weigh as $(\text{C}_6\text{H}_5\text{NS})_2\text{Th}$. It is important that a
large excess (3-4 times) of reagent is used. To prep. the
reagent see preceding abstract. Gerhard Aufleger

CA

7

A new gravimetric method for the separation of manganese from iron and aluminum. G. Spacu and Sima Lupan (Univ. Bucharest, Romania). *Anal. Acad. Rep. Populare Romane, Ser.: Mat., Fiz., Chim.*, 8, Mon. 26, 18 pp. (1959) (French summary).—Mn²⁺ can be sep. from Fe and Al as [MnPy(SCN)]₂. Treat about 30-40 ml. of the slightly acidic soln. contg. Mn, Fe, and Al ions with 2 g. tartaric acid and enough pyridine to neutralize the acid and leave a slight excess. Shake the soln. and cool to 5-7°. To the cold soln. add 2.5 g. of solid NH₄SCN. Shake and let stand. After 10 min. filter through a dried and weighed porous crucible. Wash the ppt. with a little dil. reagent until it is free from Fe and Al. Then wash with 1 ml. of 15% pyridine in abs. EtOH and finally with 2 drops pyridine in 5 ml. ether. Dry and weigh. Gerhard Aulinger.

SPACU, Gh.

Chem
A rapid procedure for the separation of copper from cobalt and gravimetric determination of the two elements. *Gh.*
Spacu and Constanta (Chimie, Acad. rep. populare, Romania, 2, 755-8 (1963)). --By combining the methods developed by Rivot for Cu (Compt. rend. 38, 868 (1851)) and of Spacu and Dick for Co (C.A. 21, 2683), a new procedure was developed, which allows the use of a single reagent, NH_4CNS , detg. the elements in the form in which they are pptd. The conditions of sepg. Cu from Co are the same as those used for sepg. Cu from Ni, except that the pptn. takes place with heating. The neutral or slightly acid soln. is treated with H_2SO_4 and NH_4CNS solns. The pptd. Cu-CNS is filtered, washed with alc. and ether, and dried under vacuum. After boiling out the SO_2 from the filtrate, pyridine is added. Upon cooling [Copy (CNS)] crystals are pptd., which are filtered, washed, and dried in vacum.
Francis Kertesz

Spacu, G.

Chem

✓ A rapid and convenient procedure for the separation of copper and nickel, and a precise gravimetric determination of these two elements. G. Spacu and Constanta Ghiorghiu. *Acad. rep. populare Romane, Bul. stiint. Sect. chim. 4, 419-23 (1952)*.—Treat a neutral soln. Ni and Cu in the cold with NH_4CNS and H_2SO_4 ; filter off the ppt., wash with water, alc., and abs. ether; dry *in vacuo*, and weigh as CuCNS . Evap. excess H_2SO_4 from the Ni-contg. filtrate, neutralize with pyridine, and cool to sep. sky-blue crystals of $\text{NiPy}(\text{SCN})_2$. Filter through a crucible, treat the ppt. in the crucible with a l. of water contg. 4 g. NH_4CNS and 8 g. pyridine; wash with 100 ml. water and a 35% alc., 1.5 ml. pyridine, and 0.1 g. NH_4CNS ; then with 100 ml. abs. ether contg. 10 drops of pyridine; dry at room temp. and weigh as $\text{NiPy}(\text{SCN})_2$.

T. Z. Deneszy

Am. J. Chem.

Spacu, G.

✓ A new macro- and microchemical gravimetric method for bismuth determination. G. Spacu and Sanda Lupan. Acad. rep. populare, Romania, Bul. stin., Sect. stin., let. si chim. 4, 425-31(1952).—The method is based on the formation of a new complex, $[\text{Cr}(\text{OH})_4\text{en}]_2(\text{BiI}_4)_2$, of higher mol. wt. than the Bi salts previously used; the sensitivity is 1:300,000. The Bi salt is first dissolved in a soln. of KI to form KBiI_4 ; treatment of this with $[\text{Cr}(\text{OH})_4\text{en}]_2$ in excess gives a yellow ppt. The ppt. is rinsed with water and 50% alc., then 96% alc. and ether, and dried *in vacuo* over P_2O_5 . The method is accurate, and requires 1-3 hrs., according to the quantity of Bi present. T. Z. Dencsey

Chem

2

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DM Rpt

SPACU. GA.

The separation and gravimetric determination of copper in the presence of iron or aluminum or of both of these metals. Ch. Spacu and Despins. *Pitea. Chim. Anal. Rep. Populare Romania* 3: 77-82 (1963). The method of S. and Dole (C.A. 21, 2633), consisting in the pptn. of Cu as a pyridine complex (Cupr(SCN)), was used for the sepn. of Cu from Fe⁺⁺⁺ and Al⁺⁺⁺, which were kept in soln. by tartaric acid (cf. C.A. 45, 7912a). The Fe⁺⁺⁺ and Al⁺⁺⁺ ions were then pptd. from the filtrate with 8-hydroxyquinoline. The method was rapid and precise. P. Kertesz.

2

PM

RUM.

New methods for the separation of copper from molybdenum and their determination. (1) March and Constant
Gheorghiu (Univ. Bucharest, Romania). Acad. Rep. Populare Romine, Studii Cercetari Chim. 2, 7-13 (1954)
(French summary).—Two methods are described: (1) treat the neutral or slightly acid soln. at 60° dropwise with an excess of H_2SO_4 and NH_4SCN (I). Filter the $CuSCN$ through a filter crucible; wash with H_2O , $EtOH$, and finally with abs. Et_2O ; dry for 10 min. in vacuo and weigh. Boil the filtrate SO_4 -free, add hot concd. HNO_3 until the soln. is colorless, and boil off the excess acid. The Mo can now be detd. volumetrically by reduction with electrolytic Cd in the presence of Fe^{3+} and subsequent $KMnO_4$ titration or, gravimetrically, as $MoO_3(C_2H_5NO)_2$ (II). (2) To 100 ml. of soln. add 0.5 g. tartaric acid and 2-5 ml. pyridine (III) until soln. is dark blue. Add I (0.5 g.), stir, filter the green $[CuPy_2(SCN)_2]$ through a filter crucible. Wash with a soln. contg. I (0.75 g.), III (2.5 ml.) and 0.5 g. tartaric acid in 250 ml. H_2O , then 3 times with 2 ml. of a soln. contg. $EtOH$ (200 ml.), H_2O (48 ml.), I (0.13 g.), and III (2 ml.); finally wash once each with 5 ml. abs. $EtOH$ and 10 ml. Et_2O , each contg. one drop of III. Dry in vacuo and weigh. Det. Mo in filtrate as above.
Gerard Auferger

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Spacu, G.

A new method for the separation and gravimetric determination of zinc. G. Spacu and Th. I. Pitea (C. I. P. Univ. Bucharest). Acad. Rep. Populare Romine, Studii Cercetari Chim. 1, 121-124 (1954) (French summary).—Zn can be precip. as $Zn(C_{11}H_8NS_2)_2$ (I) by adding an excess of a 10% soln. of the Na salt of mercaptobenzothiazole to the slightly acidic soln. (pH 5-6), filtering, washing, and drying at 115-120°. Adding a little NaCl improves the filtration. Na, K, Ca, Ba, Mg, and Sr do not interfere. Calcining I at 800-900° gives ZnO .
Gary Gerard

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Spacu, Gh.

Contributions to the study of hexachloroplumbates. II
A new class of complex compounds. Gh. Spacu and M.
Radăcină-Brezeanu (C.I. Parhon Univ., Bucharest, Ro-
mania). Acad. rep. populare Române, Bul. științ. Sec-
țiune teh. și chim. 6: 173-8(1954)(French summary); cf.
C.A. 50, 14428d. — To confirm that all the double chlorides
of $PbCl_2$ are actually complex salts with an anion $[PbCl_4]^{2-}$.
 $(NH_4)_2PbCl_6$ was treated with various metalamines.
Thus, 1 g. of $[Co(NH_3)_6CO_3]Cl$ in 20 ml. H_2O with 0.68 g.
of finely divided $(NH_4)_2PbCl_6$ in a Cl atm. gave the brick-red
 $[Co(NH_3)_6CO_3]_2PbCl_6$. With acidified solus. of $(Cr/Cu)_2-$
 Cl_2 , piperazine, urotropine, and guanine it gave the
new yellow $[Cren]_2Cl_2PbCl_6 \cdot 2H_2O$, $H_2C_4H_4N_4PbCl_6 \cdot 1/2H_2O$,
 $H_2 \cdot 2C_4H_4N_4PbCl_6 \cdot 2H_2O$, and $H_2 \cdot (C_2H_5O)_2N_2 \cdot HCl \cdot PbCl_6$.
Gary Gerard

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Gravimetric determination of copper. *G. S. Soren and H. Antoniescu. Acc. rev. populare chim., 1961, 161-5 (1965) (French summary).*—Cu is pptd. as a complex salt $(Cu(PhNH_2)_4(SCN)_2)$. Add approx. 10 ml. of the cold Cu soln. to a mixt. of $PhNH_2$ (I) (0.5-1 ml.) and 25-30 ml. of 1% aq. NH_4SCN . Let the olive-green ppt. settle for a few min.; filter through a filter crucible; wash with 30-40 ml. of H_2O contg. 1% NH_4SCN , next with 5 ml. of abs. $EtOH$ contg. a drop of I, and finally with 10 ml. of abs. Et_2O ; dry in *vacuo*, and weigh. Na, K, NH_4 , Fe, and Al do not interfere. The error is less than $\pm 0.07\%$.

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✓ Determination of cobalt and of cobalt and nickel in the

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presence of iron and aluminum. G. Spacu and M. Siliu, Acad. rep. populare Romine, Stud. cercetare chim. 9, 167-73 (1955) (French summary).—Co is pptd. as (Copy, SCN)₂ while Al and Fe remain in soln. as sol. complexes with HSC₂H₄CO₂Na (I). To a 70-80 ml. soln. of 0.1-0.2 g. Co contg. Fe and Al add an excess of I and, after a few min., 0.5-1 g. NH₄SCN (II). Heat to boiling, add 1-2 ml. pyridine (III), let cool and settle, and filter through a porous filter crucible (A₂ or A₃). Wash with a soln. contg. III (7 ml.), II (5 ml.), and I (1 g.) per l. of H₂O, then 5 to 6 times with a soln. contg. 95% EtOH (100 ml.), H₂O (85% ml.), III (10 ml.), II (1 g.), then with 1-2 ml. of a soln. contg. III (1 ml.) in 25 ml. abs. EtOH, and, finally, 8-10 times with small amts. of abs. EtOH contg. III (4 drops in 30 ml.). Dry *in vacuo* to const. wt. and weigh. Co and Ni are sepd. and detd. similarly. The error of the method is less than 0.5%. Gary Gerard

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Spaca, G.

✓ Gravimetric determination of bismuth. G. Spaca and Florica Popca (C. I. Pătraru Univ., Bucharest) ~~Anal. rep. populare Romine, Studii cercetări chim.~~ 3: 175-81 (1951) (French summary).—Bi is pptd. as *trans*-[Co(en)₂Cl₂](BiCl₄), a stable cryst. complex. To the ice-cold, slightly acidic (HCl) soln. contg. 4-50 mg. Bi, add 0.3 g. NH₄Cl and 1 ml. of an EtOH soln. of 0.4-0.5 g. *trans*-[Co(en)₂Cl₂](I) in dil. HCl (1:4). The vol. of the mixt. should not exceed 75 ml. Agitate vigorously for 5 min.; let settle for 30-45 min.; filter out the green ppt. with a porous filter crucible; wash with small portions of a soln. contg. 1 (0.1 g.), H₂O (50 ml.), EtOH (40 ml.) and HCl (d. 1.19, 1 ml.); wash with 98% EtOH, abs. EtOH, and abs. Et₂O; and dry *in vacuo* to const. wt. Na, K, Ca, NH₄, sulfate, and acetate ions do not interfere although the presence of metals from the 2nd group does. The error of the method is less than ±0.6% and decreases at the higher Bi contents.

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A new method for the separation and determination of molybdenum and cobalt. G. Spacy and Constanti Cheor-shin. *Commun. Acad. Rep. Populare Romine* 5, 385-8 (1955).—The method is based on the sepn. and detn. of Co

as $[\text{CoPy}(\text{SCN})_2]$ (cf. *C.A.*, 21, 2448), the Mo being detd. in the filtrate as quinellol (cf. *Z. anal. Chem.* 83, 470 (1931)). To 75 to 80 ml. of neutral or weak acid soln., contg. the Co^{3+} and Mo^{6+} ions, 0.5 g. of tartaric acid and 0.5 g. NH_4CNS are added. Several drops of pyridine is added at room temp. until a light white cloud appears. The soln. is heated to boiling and 1-3 ml. of pyridine is added. After cooling, the ppt. is filtered through a sintered-glass crucible and washed with a soln. contg. 7 ml. pyridine, 6 g. NH_4CNS , and 1 g. tartaric acid in 100 ml. of water. The ppt. is further washed on the crucible with an alc. soln. contg. 130 ml. 80% EtOH , 850 ml. distd. water, 15 ml. pyridine, and 1 g. NH_4CNS , then with 1 ml. abs. alc. contg. pyridine (2.5 ml. alc. plus 5 drops of pyridine). Finally the ppt. is washed 8-10 times with abs. ether to which pyridine is added (30 ml. ether plus 4 drops of pyridine). The ppt. is dried in a vacuum for 3-10 min. and weighed as $[\text{CoPy}(\text{SCN})_2]$. For the detn. of Mo, the filtrate is evapd. to 80 ml., neutralized with NH_4OH in the presence of Na alizarin-sulfonate and 10 ml. of $N \text{ NH}_4\text{OAc}$ is added. The soln. is heated to boiling and Mo is pptd. as $\text{MoO}_3(\text{C}_2\text{H}_5\text{NO})_2$ with a 3% soln. of α -quinolind in 4N AcOH . The ppt. is filtered through a sintered-glass crucible, washed with hot water, and dried for 2 hrs. at 130° .

R. Mavrodineanu

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SPACU, G. ; IUFAN, S.

Research on causes preventing under certain conditions precipitation of small quantities of lead by hydrogen sulfide; new complex combinations of lead. p. 555. (COMUNICARE. Rumania. Vol. 5, no. 3, Mar. 1955)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 7, July 1957. Uncl.

SPACU, G.

Rapid precise process for separation and gravimetric
quantitative analysis of zinc in the presence of iron
and aluminum. p. 859.
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no. 5, May 1955.

SOURCES: EEAL LC Vol. 5, No. 11, August 1956